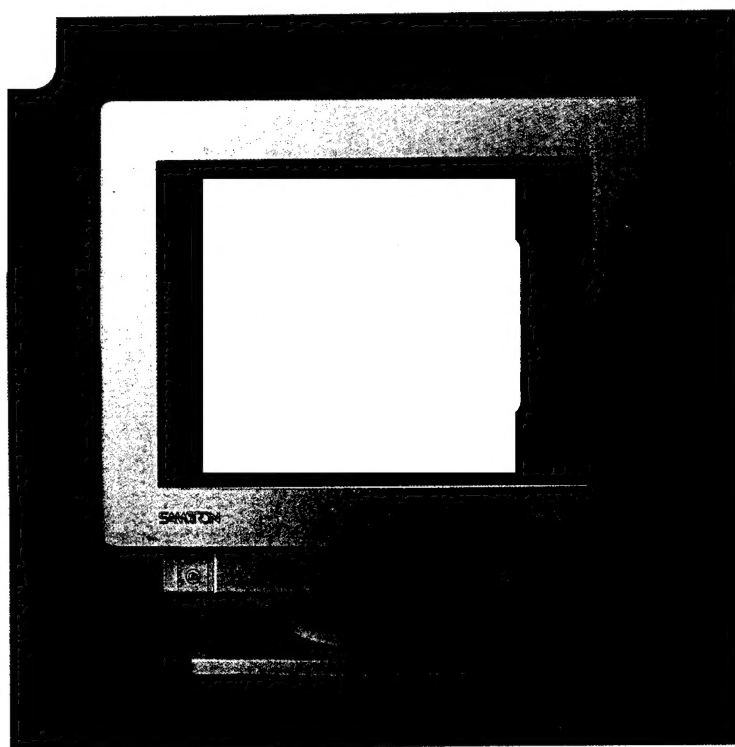


**SAMTRON**

15" ERGO ULTRA VGA COLOR MONITOR

# **SERVICE MANUAL**

SC-528UXL



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## 1. Specification

Classification	Specification
Picture tube	15 Inches diagonal 90 degree deflection, 0.28mm dot pitch, black matrix
Input signal	Video : 0.7Vp-p Analog level positive Sync : TTL level
Display colors	Any Color
Synchronization	Horizontal : 30~65KHz( Automatically) Vertical : 50~100Hz( Automatically)
Resolution	640 dots(H) × 400Lines 640 dots(H) × 480Lines 800 dots(H) × 600Lines 1024 dots(H) × 768Lines 1280 dots(H) × 1024Lines
Video band width	75MHz(3db)
Display area	Horizontal : 260 ± 5mm Vertical : 195 ± 5mm
Ac input voltage	AC 90~265V( 47~63Hz)
Power consumption	80W(MAX.) ± 10%
Dimension	354(W) × 369(H) × 400(D)mm
Weight	14kg Net, 16kg Gross

### [Notice]

The information contained in this document is subject to change without notice.



## 2. Safety Precautions

**WARNING:** Service should not be attempted by anyone unfamiliar with the necessary precautions on this unit.

The following precautions are necessary during servicing.

1. Some parts such as a picture tube in this unit have special safety-related characteristics for X-RAY RADIATION protection.

For continued safety, the parts replacement should be undertaken referring to item 2 below.

2. Many electrical and mechanical parts in this unit have special safety-related characteristics for protection against shock hazard and others.

These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage wattage, etc.

Replacement parts which have these special characteristics are identified in the manual and supplements by shading on the schematic diagram and the parts list.

Before replacing of these components read the parts list in this manual carefully

3. When replacing chassis in the cabinet, always be certain that all the protective devices are installed properly, such as insulating covers, strain relief, etc.
4. Before replacing the back cover of the set, thoroughly inspect inside the cabinet to see that no stray parts or

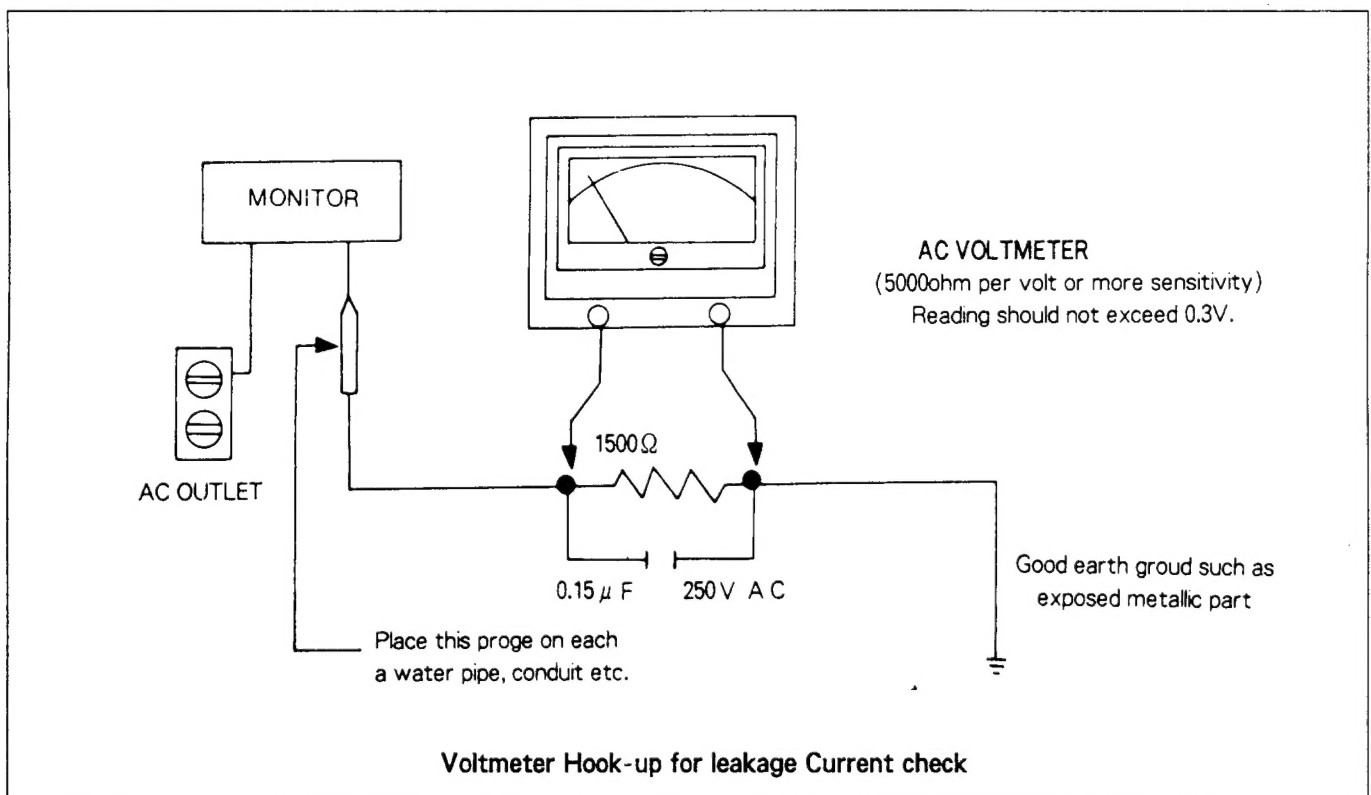
tools have been left inside.

5. Before returning the set to the customer always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as terminal, screw-heads, metal overlays, control shafts, etc. To be sure the set is safe to operate without danger of electrical shock, Plug the AC line cord directly into a 115V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner.

Connect a 1500 ohm, 10watt resistor, paralleled by a 0.15mfd( $\mu F$ ), 250VAC capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time.

Measure the AC voltage across the combination of 1500 ohm resistor and 0.15mfd( $\mu F$ ) capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.

Voltage measured must not exceed 0.3V RMS. This corresponds to 0.2mA AC any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



### 3. General Information

#### [Introduction]

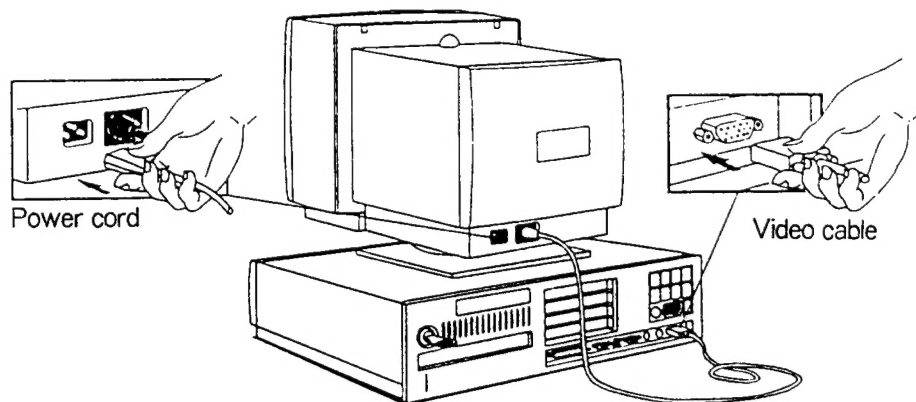
The Ergo Ultra VGA Display(SC-528UXL) is a 15-inch, high resolution, multisynchronous color video display.

#### 3-1. Features

- 1) 15 inch Flat Square Tube reduces glare and enhances viewing area.
- 2) Anti-Static CRT coating eliminates static electric shock and helps keep the screen dirt free.
- 3) Automatically scans horizontal frequencies from 30-65KHz, and vertical frequencies from 50-100Hz.
- 4) Non-Interlaced screen resolution of 640 × 480, 800 × 600, 1024 × 768 and 1280 × 1024
- 5) Microprocessor based digital control system saves up to 8 user definable display settings. Also includes 12 factory preset display setting.
- 6) Full DPMS(Display Power Management System), When used with a DPMS-capable PC, to automatically reduce the power consumption of the display in standby mode and in sleep mode.

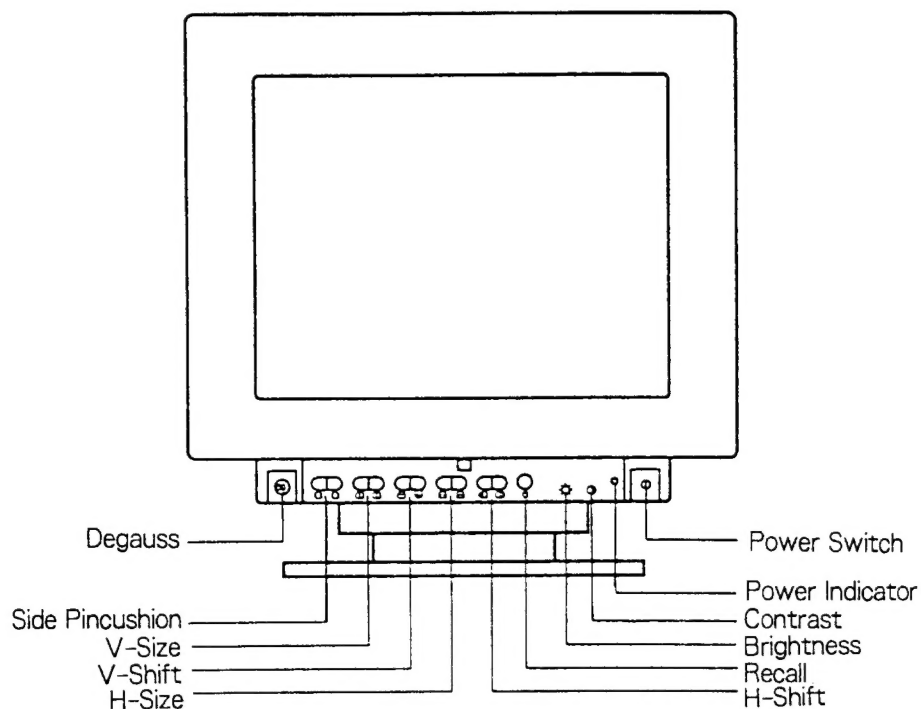
#### 3-2. Installation

- 1) Make sure your computer is turned off.
- 2) Put the display on top of the computer, or on a flat, sturdy surface. For optimum viewing, position the display so that the top of the screen is slightly below eye level.
- 3) Connect the end of the video cable to the video connector on the back of your computer. (If you are not sure where this is, refer to your computer's setup manual.)
- 4) Connect the power cord to the display.
- 5) Plug the power cord into the power outlet.



### 3-3. Control Location & Functions.

#### 1) Front view



#### 2) Controls and Indicator Functions

##### ① Power Switch



Use to switch monitor power on and off. Push the power switch once to turn monitor power on. The indicator LED glow green. Push the switch again to turn monitor power off.

##### ② Power Indicator(Dual Color)



LED Color	Function
Green	When the monitor is powered on.
Orange	When the DPMS function is operated as Suspend mode.
Orange flickering	When the DPMS function is operated as OFF mode.

##### ③ Contrast Control



Use to adjust the contrast level of the displayed image. Contrast controls the difference between dark and areas of the displayed image.

##### ④ Brightness Control



Use to adjust the over all brightness of the displayed image.

⑤ **Recall**



Use this button to recall factory preset settings. This function is only for Standard modes.

⑥ **Horizontal Shift(H-Shift)**



Push this button once to adjust the horizontal position(centering) of the display. Use the variable adjustment control to adjust.



⑦ **Vertical Shift(V-Shift)**



Push this button once to adjust the vertical position(centering) of the display. Use the variable adjustment control to adjust.



⑧ **Horizontal Size(H-Size)**



Push this button once to adjust the horizontal size(width) of the display. Use the variable adjustment control to adjust.



⑨ **Vertical Size(V-size)**



Push this button once to adjust the vertical size(height) of the display. Use the variable adjustment control to adjust.



⑩ **Side Pincusion**



Push this button once to adjust the vertical sides of the display from bowing in(pincushion) or bowing out (barrel distortion). Turn the variable adjustment control until the vertical sides are straight.



⑪ **Degauss**



Magnetic fields can build up on the CRT and cause color impurity. Use the DEGAUSS switch to demagnetize the CRT. Push the switch once to activate the degaussing circuit. The degaussing circuit automatically turns itself off after a few second.

⑫ **Trapezoid**



+



To activate the trapezoidal adjustment function, press the side pincusion button with pressing both H-Size buttons.



or

Use the variable adjustment control.



+



⑬ **Parallelogram**



+



To activate the parallelogram adjustment function, press the side pincusion button with pressing both V-size buttons.



or

Use the variable adjustment control.



+



### 3-4. Electrical Characteristics

#### 1) Input Power

The display device shall maintain the specified performances in the range described below.

NO	Description	Spec.	Remark
1	Power Source	AC 90V~265V	Universal Power
2	Frequency	47~63Hz	
3	Power Consumption	MAX. 80W $\pm$ 10%	

#### 2) Input Signal

The input signals shall be applied to the display devices through a signal cable which must be intended as part of the monitor. (Ref. 5. Timing chart)

Section	Description	Spec.	Remark
Video Signal (Red, Green, Blue)	Video input	0.0 to 0.7V <sub>pp</sub> Analog	
	Polarity	Positive	
	Pixel Rate	Up to 75MHz	
	Rise/Fall Time	Less than 8 nsec	
	Input impedance	75 ohms	
Horizontal Sync.	Sync input	$2.4 \leq \text{Level} \leq 5V$	
	Pulse Width	1.0~3.92usec	
	Frequency	30KHz~65KHz( Automatically)	
	Front Porch	0.18~2.12usec	
	Back Porch	1.25~4.6usec	
Vertical Sync.	Sync Input	$2.4 \leq \text{Level} \leq 5$	
	Pulse Width	0.06~0.2msec	
	Frequency	50~100Hz( Automatically)	
	Front Porch	0.01~1.2msec	
	Back Porch	0.47~1.88msec	

#### 3) CRT Electrode voltage

NO	Description	Spec.	Remark
1	Heater	6.3V $\pm$ 0.5V, 630mA $\pm$ 30mA	
2	Cathode(R. G. B)	70 $\pm$ 10V	
3	Gride # 1	0V ~ - 70V	
4	Gride # 2	600V $\pm$ 100V	Screen
5	Gride # 3	6.5KV $\pm$ 0.5KV	Focus
6	Anode Voltage	24KV $\pm$ 1kV@0uA	Raster cut off

#### 4) Display Power Management System (Power Saving Function)

The Display power Management System, depending on the capabilities of your computer, controls the power consumption of the display. For information on the capabilities of your computer refer to your computer's documentation where the capabilities may be described under power saving or security.

Standby mode is activated after a certain period of inactivity of the keyboard.

Sleep mode is activated from standby mode after an extended period of inactivity, or, depending on the CPU capabilities, at the end of the working day.

For computers that support display power management, these periods can be specified in SETUP.

Mode	Power	Indicator Light	Synchronization Signals
Nomal	85W(Max)	Green	Synchronization signals nomal
Standby	less than 15W	Orange	One signal is cut the other is nomal.
Sleep	less than 5W	Orange Blinking (500ms)	After stand by mode, the second synchronization signals is cut. This means that both signals are cut.

### 3-5. Mechanical Characteristics

#### 1) Weight

The total weight shall be less approximate 16kg.

#### 2) External Dimensions(mm)

	Without stand	With Stand
Width	354	354
Height	335	369
Length	400	400

#### 3) Tilt/Swivel

The inclination of the surface of the screen shall be adjustable at least  $-5^{\circ}$ deg. With a min.  $1^{\circ}$ deg. from the vertical.

The swivel must be min.  $180^{\circ}$ deg.

#### 4) Tool Resin

Tool	Resin	Color
Front	VH-0853	PARCHMENT WHITE
Rear	VH-0853	PARCHMENT WHITE
Stand	VH-0853	PARCHMENT WHITE

### 3-6. Operation of Circuit

The circuit of this monitor could be divided into four sections.

One of them is power supply section, and the others are the interface, sweep video, and CDT drive section.

#### 1) Power Circuit

The switching mode power supply is adopted for this circuit.

The chassis(secondary side) is insulated from the power source(primary side) by the transformer T101.

By the winding of the transformer T101 connected to the collector of IC101 and the other winding connected to the control circuit, the IC101 is submitted to negative feed back and it operates as a blocking oscillator.

When the voltage of power source or load current is varied, it is detected by the winding and the voltage is applied to Pin2 of IC101.

When the voltage applied to Pin2 is varied, the conducting time of IC101 is varied to compensate output voltage for the change.

Which makes output voltage of T101 stabilized.

The range of operating frequency is 22KHz~70KHz.

#### 2) +B Voltage Regulator Circuit

PWM is a regulator for controlling +B voltage of each mode supplied to FBT(T301) Pin2. HIC101 detects the level of pulse which comes from FBT Pin6 and output signals with different duty times and frequencies. These signals drive Q103 to control the adjustment of +B voltage of each mode to FBT Pin2.

#### 3) DPMS Circuit

##### ① Suspend MODE

If the H or V sync input is inactive for more than 2seconds, the output of 8751 Pin4 becomes high, And the output voltage of IC102 drops to 1V(approx) from 12V.

Therefore the horizontal deflection circuit, the high-voltage generation circuit and the video amp circuit can not operate.

At this mode, Q111 connected to heater is off. The voltage of heater become to 4-5V, which could increase the lifetime of heater. At this suspend mode, the LED on the front of this unit blinks alternately between green and orange color as 1 second period.

The power consumption at suspend mode is less than 30W.

##### ② Power off MODE

If both of H and V sync inactive for more than 2 seconds, the output of 8751 Pin3 becomes low. The transistor connected to Pin4 and pin5 inside IC106 is off.

Then Q108 is on and switching transistor of SMPS becomes off.

At this power off, the LED on the front of this unit blinks alternately between green and orange color as 2 second period.

The power consumption at suspend mode is less than 5W.

\* Inactive signal : H-sync-Less than 10KHz repetition frequency.

V-sync-Less than 20Hz repetition frequency.

#### 4) Interface Circuit

This is composed of block.

The other MCU circuit which detects frequency and polarity, control image state.

It uses Micro controller unit, which has four functions as follows.

\* MCU identifies each mode by processing the received frequency and polarity of the sync. from computer.

\* MCU controls EEPROM and DAC IC to output proper signal for picture size, frequency, picture position, etc.

\* When monitor is turned on or mode is changed, mute function is operated.

\* The data about image state can be memorized in EEPROM by MCU.

### 5) Video Drive Circuit

The R, G, B input signals with analog level are applied to the pre-amplifier LM1203.

This section amplifies the output signal of a generator enough to drive a video output circuit.

Video gain is controlled by the DC voltage of Pin12 and DC bias is controlled by the DC voltage of the Pin15, 19 and 24.

Clamping pulse is applied to Pin11 through IC601.

### 6) Video Output Circuit.

The preamplified R, G, B video signals are applied to the amplifier Q402R, G, B and Q401R, G, B. And then, these video signals are driven to the cathodes of CRT through the single-ended-push-pull amplifiers. The CRT bias for correct white balance is obtained by R, G, B-bias controls VR401R, G, B

### 7) Deflection Circuit

This circuit has two ICs. IC301(TDA4852) is a monolithic IC for horizontal and vertical sync. processing. And IC201 is a monolithic IC for vertical power amplifier.

#### ① Vertical Deflection Circuit.

The vertical sync. signal is applied to Pin10 of IC301. the vertical frequency of the oscillator can be varied by the RC constant at Pin15, 16. Vertical screen size can be controlled by the voltage at Pin13 of IC301, and vertical screen position is determined by DC current flowing through vertical DY, and can be controlled VR201. IC201 is the vertical power amplifier that drives vertical DY.

#### ② Horizontal Deflection Circuit.

The horizontal sync. signal with negative polarity is applied to Pin9 of IC301.

The horizontal frequency of the oscillator can be controlled by the voltage at Pin18 of IC301.

VR301 adjusts the free-running frequency and MCU traces the horizontal synchronization according to input signal(30KHz~65KHz).

The phase of horizontal saw-tooth wave is compared with that of fly back pulse and horizontal sync. signal at AFC circuit of the IC301.

By adjusting the voltage of Pin No 20, the horizontal position of picture is varied.

The horizontal frequency oscillation is obtained from Pin17 of IC301.

The output of IC301 comes out of Pin3 and is fed to the horizontal drive circuit.

The horizontal output circuit uses a resonant flyback system to drive the deflection yoke.

#### ③ EHT Generator Circuit.

The output of horizontal drive circuit is fed to the resonant flyback system which generates EHT voltages to drive. CDT.

### 8) Side-Pincushion Corrector.

This circuit compensates the east/west distortion through the method of diode modulation.

The signal processing of east/west correction is done in IC301.

The parabola amplitude can be controlled by DC voltage at Pin14 of IC301.

The east/west correction is adjusted by DC voltage of Integrator input.

### 9) Protection Circuit

If a failure which causes high voltage increased, occurs(such as opened sweep capacitor or failed power regulator) the cathode voltage of D304 will be increased by the FBT(T301).

Then the protection occurs by turning on Q305 as a result of the breakdown of the D303.

When this happens, The oscillator signal coming from IC301 can no longer drive Q301, then the set is turned off.

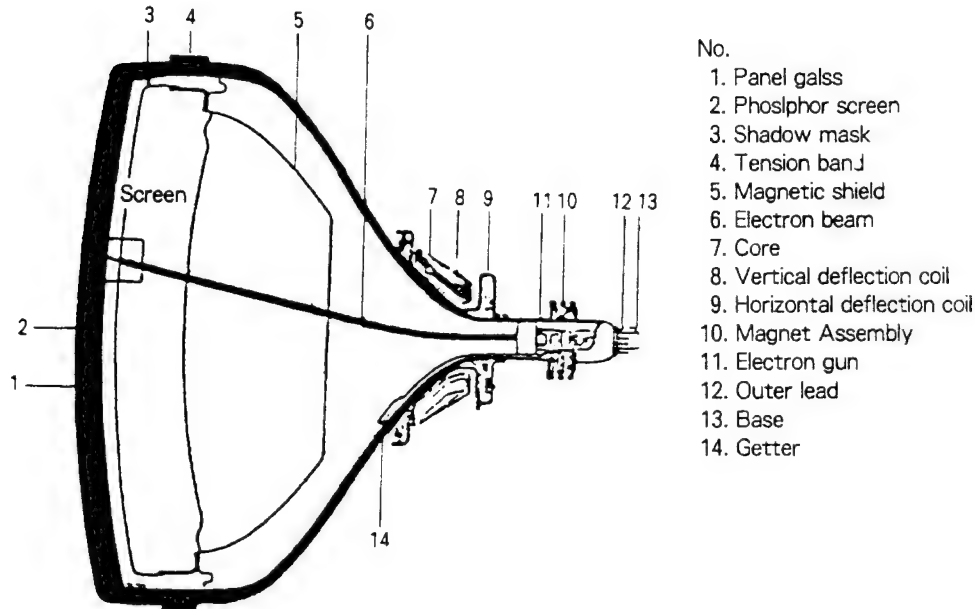
Therefore in order to restart operation the monitor must be turned off and again.



### 3-7. CDT

#### 1) Structure

CRT Basic Structure



- MASK : R. G. B electron beam pass through this mask.  
Each gun's beam strikes the phosphor.
- DY(Deflection Yoke) : This moves the beam right to left and up to below, vice versa.
- MAGNET : These magnets decide the centering and convergence
- MOUNT : This generates thermal electrons, controls the amount of beam, accelerates the beam and focuses the beam at the screen.

#### 2) Magent Assembly [C.P.M(convergence purity magnet)]

2POLE, 4POLE, 6 POLE

- ① 2 pole magnet : Purity and VRS control.
- ② 4 pole magnet : Convergence control-concentrates the R and B beam.
- ③ 6 pole magnet : Convergence control-the concentrated R and B beam by 4 pole magnet is adjusted to harmonize with G beam.

\*1. Convergence : The degree of concentration of R. G. B colors.

2. Purity : The degree of pure color.

The most important part of monitor is CDT.

#### 3) White Balance Adjustment

- ① Adjust R and B bias controls in order that the color analyzer indicates  $X=0.281 \pm 0.02$ ,  $Y=0.311 \pm 0.02$  without video signal.
- ② Apply video signal (Full Whith Pattern).
- ③ Adjust R and B gain controls in order that the color analyzer indicates  $X=0.281 \pm 0.02$ ,  $Y=0.311 \pm 0.02$  with max contrast.

### 3-8. Reliabilities

#### 1) Environmental

The monitor unit must not be degraded and damaged by operating over the specified range and will meet specifications when returned to the operating environment. SDD will perform these tests on the monitor prior to its release. The monitor is required to pass these tests before mass production. These tests are detailed in SDD environment specification.

#### 2) Temperature

- \* Operating :  $-10^{\circ}\text{C}$  To  $55^{\circ}\text{C}$
- \* Storage :  $-40^{\circ}\text{C}$  To  $+65^{\circ}\text{C}$

#### 3) Humidity

- \* Operating : 30% To 95% (Non condensing)
- \* Storage : 30% To 95%

#### 4) Drop : Refer to SDD ENVIRONMENTAL TESTS MANUAL.

#### 5) Leakage current : Refer to SDD ENVIRONMENTAL TESTS MANUAL.

#### 6) Vibration : Refer to SDD ENVIRONMENTAL TESTS MANUAL.

#### 7) Life test (MTBF)

The monitor shall have 30,000hrs MTBF when operated under any combination of conditions as detailed specification.

#### 8) Altitude.

- \* Operating :  $0\sim 45^{\circ}\text{C}$   
 $0\sim 15000\text{ft}$
- \* Non operating : MAX. 50000FT

### 3-9. Safety and Approvals.

#### 1) Safety regulatory

The system will be certified according to the following international safety standards.

- \* UL 1950 WITH D3
- \* CSA C22.2 No.950 WITH D3
- \* TUV EN60950
- \* I. A. A BY KOREAN SAFETY CONTROL LAW

#### 2) Electromagnetic interference.

The system will be certified according to the following international radiation standards.

- \* FCC 47 CFR. Ch15, SUB. J
- \* DOC SOR/88-475
- \* BZT DIN VDE 0871/BMPT-Vfg. 243/1991
- \* D. O. T BY KOREANLAWS. 100

#### 3) X-Radiation.

The X-radiation emitted from this picture tube will not exceed 0.5mR/h for anode current combination. X-radiation at a constant anode voltage varies linearly with anode current.

The system will comply with the following international standards.

- \* DHHS 21 CFR SUB CH J
- \* SWEDAC MPR 1990 : 8, 10, SEC 2

#### 4) Ergonomics.

The complete assembly shall be certified as complying with the following international standards.

\* TUV/GS : ZH1/618/10:80

\* TUV/ERGONOMIC : ISO 9241. PART 3

#### 5) Low radiation.

\* SEMCO MPR 1990 : 8. 10, SEC. 2

\* TUV/ERGONOMIC MPR 1990 : 8, 10, SEC. 2

### 3-10. Signal Cable & Connection

#### 1) Signal cable

A shield signal interface cable must be intended as a part of the monitor.

The cable length shall be 1500mm with a tolerance of  $\pm 50$ mm.

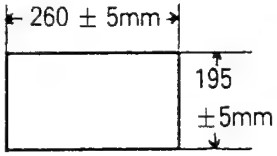
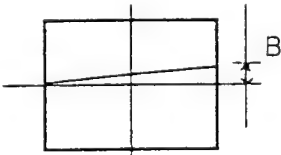
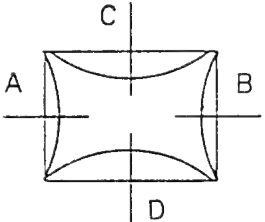
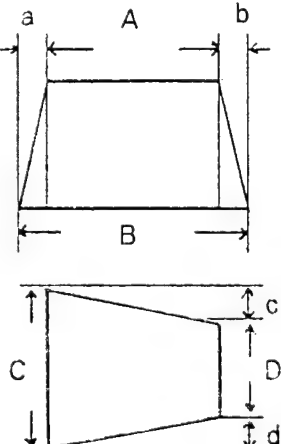
This cable shall be of a suitable type in order to comply with any specification item, and shall be terminated in a 15 pin D-shell male connector type FOXCONN D973292-8 or equivalent, with pin assignment as follows.

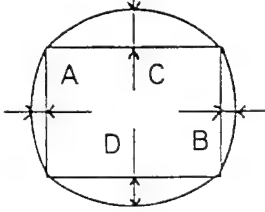
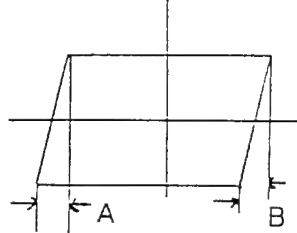

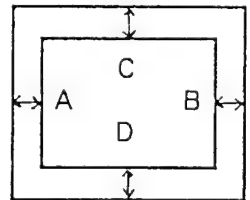
#### 2) Signal pin connection

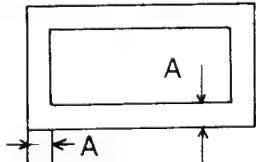
\* Signal cable pin connection (15 pin d-sub miniature signal connector with cable)

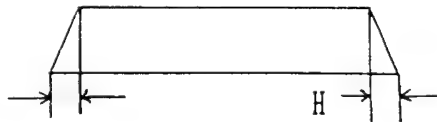
NO	PGB ANALOG SIGNAL	SIGNAL PIN NO.	WIRE COLOR	RMK.
1	RED	PIN #1	RED	
2	GREEN	PIN #2	GREEN	
3	BLUE	PIN #3	BLUE	
4	GND	PIN #4	BLACK	
5	GND	PIN #5	BLACK	
6	RED GROUND	PIN #6	BLACK	SHIELDED
7	GREEN GROUND	PIN #7	BLACK	SHIELDED
8	BLUE GROUND	PIN #8	BLACK	SHIELDED
9	N.C	PIN #9		
10	GND	PIN #10	BLACK	
11	SYND GND	PIN #11	BLACK	
12	N. C	PIN #12		
13	H-SYNC	PIN #13	WHITE	
14	V-SYNC	PIN #14	YELLOW	
15	N. C	PIN #15	BLACK	

## 4. Visual Specification

No	Item	Specification	Requirement	Pattern
1	Visual			
1-1	Display size		<ul style="list-style-type: none"> <li>* Display the cross hatch pattern.</li> <li>* Using the color monitor template measure the picture size.</li> <li>* Max. size : more than 275 * 210mm</li> <li>* Min. size : less than 250 * 175mm</li> </ul>	Cross-hatch (all specified standard mode)
1-2	Shift	Visual test	<ul style="list-style-type: none"> <li>* H-SHIFT variation range : more than display area(raster)</li> <li>* V-SHIFT variation range : To be adjusted on the center of screen.</li> </ul>	"
1-3	Linearity	$\leq 5\%$ $(L_{max} - L_{min})$ $* 100\%$ $(L_{max} + L_{min})$	<ul style="list-style-type: none"> <li>* The linearity of screen must be displayed on the CRT within the spec.(Horizontal and Vertical)</li> <li>* The length of a square size. (H : 16 X V : 12)</li> </ul>	"
1-4	Tilt		<ul style="list-style-type: none"> <li>* The tilt within the limits of the specification.</li> <li>* <math>B = \pm 2.0\text{mm}</math> Max</li> </ul>	Cross-hatch (mode No.7)
1-5	Distortion 1) Pincushion		<ul style="list-style-type: none"> <li>* Maximum allowable error;</li> <li><math>A, B, C, D \leq -2.5\text{mm}</math></li> </ul>	Cross-hatch (all primary mode)
	2) Trapezoid		<ul style="list-style-type: none"> <li>* <math> A-B  &lt; 4\text{mm}</math></li> <li>* <math> C-D  &lt; 3.5\text{mm}</math></li> <li>* <math>a, b, c, d &lt; 2.5\text{mm}</math></li> </ul>	"

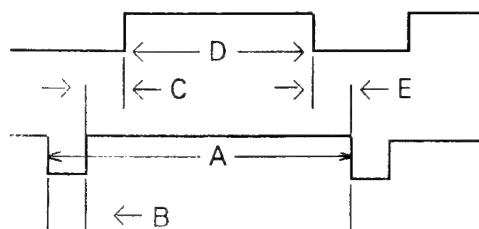
No	Item	Specification	Requirement	Pattern
	3) Barrel		<ul style="list-style-type: none"> <li>* Maximum allowable error;</li> <li>* A, B, C, D = 2.0mm max</li> </ul>	Cross-hatch (all primary mode)
	4) Parallelogram		<ul style="list-style-type: none"> <li>* A, B &lt; 2.5mm</li> </ul>	"
	5) "S" Curve		<ul style="list-style-type: none"> <li>* A ≤ 2.0mm max</li> </ul>	Cross-hatch (mode No. 7)
1-6	Display centering		<ul style="list-style-type: none"> <li>* <math> A - B  \leq 6\text{mm}</math></li> <li>* <math> C - D  \leq 6\text{mm}</math></li> <li>* Measure A, B, C, D at all modes.</li> </ul>	Cross-hatch (all primary mode)
1-7	Focus	Visual test	<ul style="list-style-type: none"> <li>* BRT : cut off CONT : max</li> <li>* window 'me' pattern</li> <li>* FONT : m;8*10</li> <li style="padding-left: 40px;">e;8*7</li> </ul>	mode No. 7
1-8	Moire	Visual test	<ul style="list-style-type: none"> <li>* 20 F/L(BRT;cut- off, CONT;adjust)</li> <li>* Full white pattern</li> </ul>	"
1-9	Jittering	Visual test	<ul style="list-style-type: none"> <li>* There shall be no jitter when the screen is viewed from 45 cm.</li> </ul>	Cross-hatch
1-10	Mis-convergence	<ul style="list-style-type: none"> <li>* Central area : 0.3mm max</li> <li>* Circumference : 0.4mm max</li> <li>* A zone : 195mm</li> </ul>	<ul style="list-style-type: none"> <li>* Measure the distance between red, green, and blue lines with a microscope after proper adjustment of white balance.</li> </ul>	Cross-hatch (mode No. 7)
1-11	Acoustic noise	<ul style="list-style-type: none"> <li>* Not any audible sound</li> </ul>	<ul style="list-style-type: none"> <li>* With the display operating, it has not to be any audible sound.</li> </ul>	Cross-hatch

No	Item	Specification	Requirement	Pattern
1-12	Whith balance	* Color coordinate $X = 0.281 \pm 0.02$ $Y = 0.311 \pm 0.02$	* The white color coordinates in the center of the surface of CRT after proper adjustment of white balance.	Full White pattern (mode No. 7) (video level : 0.7V)
1-13	White color tracking	* Color coordinate $X = X(\text{center}) \pm 0.02$ $Y = Y(\text{center}) \pm 0.02$	* Measure it after setting the brightness to max. and adjusting the contrast for 10 F/L * Measure it after setting the brightness to max. and adjusting the contrast for 25 F/L * Raster : 1.0 – 2 F/L	"
1-14	Maximum light output	* Full white pattern ; 27 – 40 F/L * White window pattern (70 * 70mm) ; more than 35F/L	* 0.7V video drive level input over the entire active image area. * 100% white level input over the entire active image area. * Measure it at center of CRT faceplate. * Contrast control set to maximum. * Brightness control set to maximum.	"
1-15	Purity	* Display image : Full white screen. * Visual test. Bh; $0 \pm 300\text{mG}$ Bv; $450 + 150\text{mG}$ – 300mG	* Set contrast V/R to max and brightness V/R to cut off position. * After power on, it must not appear any perceptible color shift in the scanning area while viewing in all direction. If it appears some perceptible color shift, it has to disappear any perceptible color shift after manual degaussing.	Primary color pattern – "R" (mode No. 7)
1-16	Size reguration	* 1.8% MAX	* BRT : cut off, CONT : min-max	Full white pattern (mode No. 7)
1-17	Brightness uniformity	Better than 70%	* Measure it at center brightness 25F/L, BRT : cut off	"
1-18	Mode change	Visual test	* When mode changes, video don't appear video fold.	All mode
1-19	Total distortion	* Use display template. 	* Primary mode; mode No. 1, 6, 7, 10, 11 $A \leq 2\text{mm}$ * Secondary mode; mode No. 2, 3, 4, 5, 8, 9, 12 $A \leq 4\text{mm}$	Crosshatch

No	Item	Specification	Requirement	Pattern
1-20	Spot	* No spot	* AC On/off cycle; 0.5sec	
1-21	Dynamix regulation	* H = 1.5mm	<p>H</p>  <p>* White bar pattern * BRT : cut-off * CONT : max</p>	White bar pattern (mode No. 7)
1-22	Hum Video wave	* Visual test	* There should be no video wacing, hum within the variable range of use's control.	
1-23	Ringing	<p>* No ringing at the standard videro size and shift.</p> <p>* 64KHz mode : 3 times waving is acceptable.</p>	* No ringing within the variable range of BRT, CONT V/R.	Full white pattern
1-24	Cdt screen and faceplate blenishe	* Refer to attachment 1.		

## 5. Timming Chart

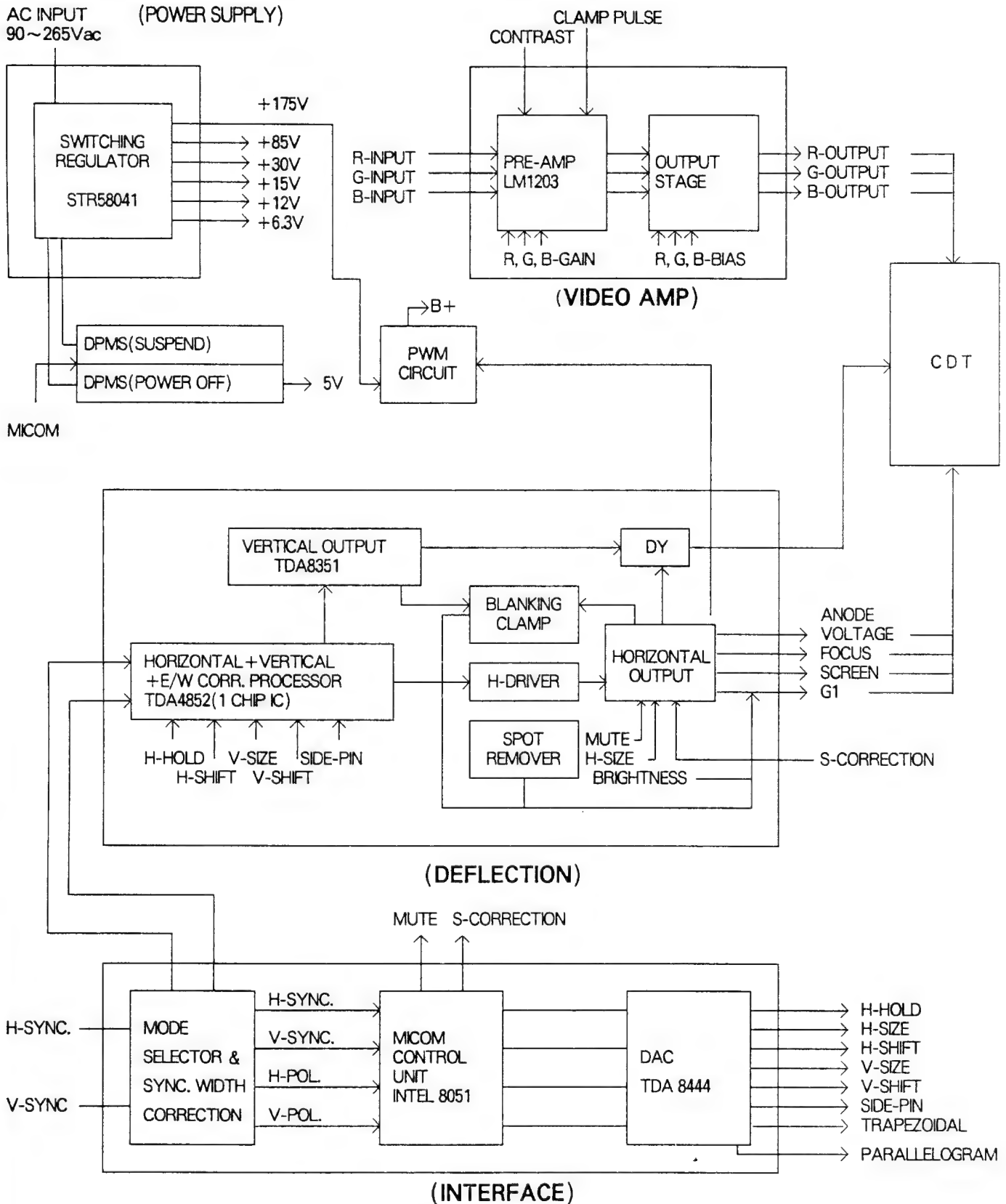
\* SEPERATE



DESCRIPTION			RESOLUTION											
			640 X 400	640 X 480				800 X 600				1024 X 768 ( I )		
H	Hf	KH <sub>z</sub>	31.47	31.47	37.50	37.90	35.16	37.88	48.08	46.875	35.52	56.48	60.023	63.70
	A	uS	31.77	31.77	26.67	26.41	28.44	26.40	20.80	21.33	28.15	17.71	17.66	15.70
	B	uS	3.77	3.77	2.03	1.27	2.00	3.20	2.40	1.62	3.92	1.81	1.22	1.36
	C	uS	1.89	1.89	3.81	4.07	3.56	2.20	1.28	3.23	1.25	1.92	1.24	1.81
	D	uS	25.17	25.17	20.32	20.32	22.22	20.00	16.00	16.16	22.80	13.65	13.00	12.08
	E	uS	0.94	0.94	0.51	0.51	0.67	1.00	1.12	0.32	0.18	0.32	0.02	0.45
	POL.		NEG.	NEG.	NEG.	NEG.	P/N	POS.	POS.	POS.	POS.	NEG.	POS.	NEG.
V	Vf	KH <sub>z</sub>	70	60	75	72.81	56	60.317	72.187	75	86.906	70.069	75	60,096
	A	mS	14.27	16.68	13.33	13.74	17.78	16.58	13.85	13.33	11.50	14.27	13.33	16.64
	B	mS	0.06	0.06	0.08	0.08	0.06	0.11	0.13	0.06	0.11	0.11	0.05	0.05
	C	mS	1.08	1.02	0.43	0.74	0.63	0.61	0.48	0.45	0.56	0.51	0.47	0.47
	D	mS	12.72	15.25	12.80	12.68	17.07	15.84	12.48	12.80	10.81	13.60	12.80	16.08
	E	mS	0.41	0.35	0.027	0.238	0.03	0.03	0.77	0.02	0.01	0.05	0.02	0.05
	POL.		POS.	NEG.	NEG.	NEG.	P/N	POS.	POS.	POS.	POS.	NEG.	POS.	NEG.
Mode No.			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.

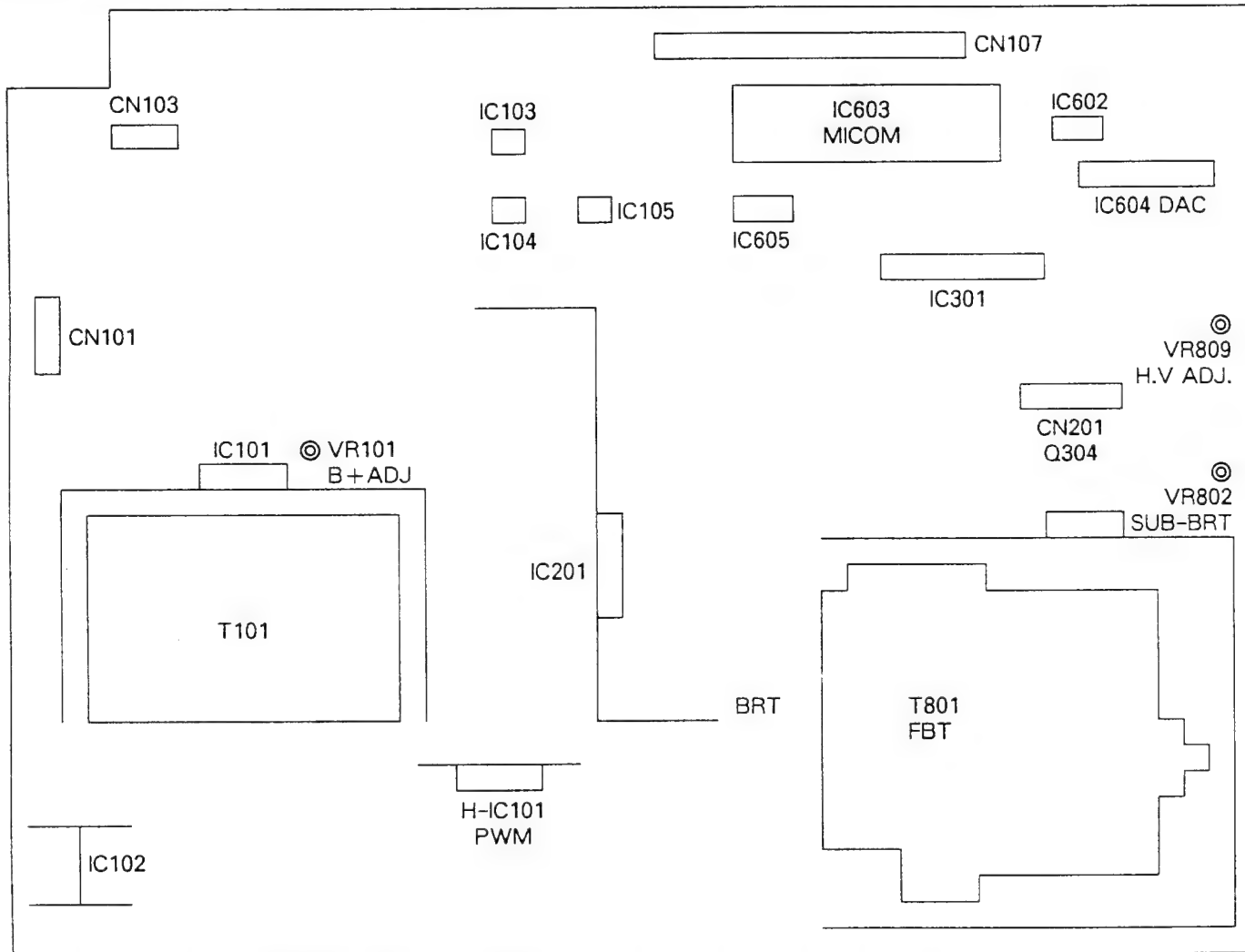


## 6. Block Diagram

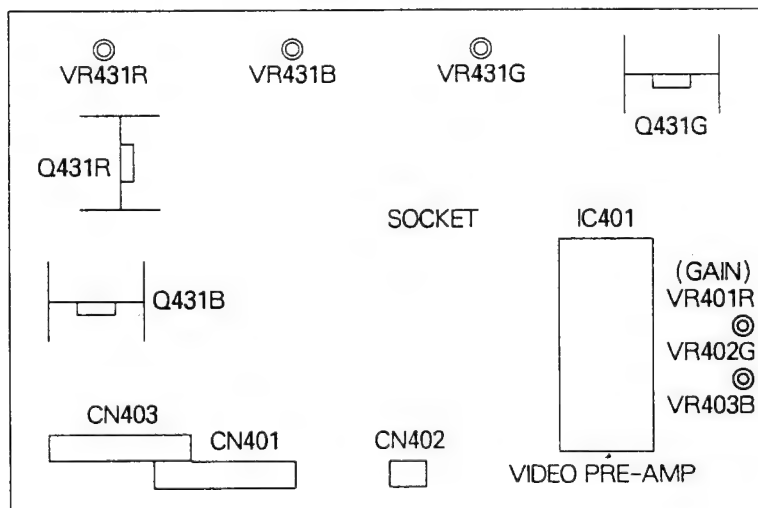


## 7. Position of Internal Controls

### 7-1. Position of Control Part in Main PCB(PART NO. : 16-111-01404).



### 7-2. Position of Control Part in Socket PCB(PART NO. : 16-111-01431).



## 8. Adjustments

\* All kinds of internal V/R should be setted at the mechanical center position.

### 8-1. +B Voltage Adjustment

- \* Receive a cross-hatch pattern signal of VGA 640 × 480 mode.
- \* Adjust contrast and brightness controls to maximum.
- \* Adjust G2 control to optimum video luminance.
- \* Make sure the AC power supply voltage is at the specified value.
- \* Adjust VR101 for the voltage of 30V equal to 28.2~28.4V

### 8-2. High Voltage Adjustment

- \* Receive a cross-hatch pattern signal of VGA 640 × 480 mode.(31.5 KHz)
- \* Adjust VR801(H/V adjust) for the voltage of Pin No. 2 of FBT equal to 64.5~64.7V.

### 8-3. Horizontal Deflection Circuit Adjustment

#### 1) Horizontal oscillation Frequency adjustment(H-HOLD)

- \* Disconnect the signal cable from signal source.
- \* In order not to operate in Auto power down off, power on while pressing the side-pin keys(both SW901 and SW902 simultaneously) for 2 seconds. Check the LED in front bezel, the LED should not blink. If it blinks, power off and repeat the above procedure again.
- \* Adjust VR301(horizontal frequency control) for the horizontal frequency equal to  $32.2 \pm 0.2\text{KHz}$ .
- \* The horizontal frequency for the other modes are automatically set by interface circuit.

#### 2) Horizontal position adjustment. (H-SHIFT)

- \* Receive a cross-hatch pattern signal of all specified standard modes.
- \* The picture is to be placed at the center position of the CDT screen using control button(H-SHIFT)

#### 3) Horizontal width adjustment(H-WIDTH)

- \* Adjust contrast and brightness controls to maximum.
- \* Receive cross-hatch pattern for all modes and make H-SIZE to 260mm  $\pm$  5mm using control button(H-SIZE)

### 8-4. Vertical Deflection Circuit

#### 1) Vertical size adjustmen(V-SIZE)

- \* Receive a cross-hatch pattern signal of all specified standard modes.
- \* Make the height to 195mm  $\pm$  5mm using control button(V-SIZE).

#### 2) Vertical position adjustment(V-SHIFT).

- \* Receive a cross-hatch pattern signal of specified standard modes.
- \* The picture is to be placed at the center position of the CDT screen using control button(V-SHIFT).

### 8-5. Side-pincushion Adjustment(S-PIN).

- \* Receive cross-hatch pattern signal of all specified standard modes.
- \* And adjust side-pincushion using control button(S-PIN).

### 8-6. Trapezoidal Adjustment.

- \* Recive cross-hatch pattern signal of all specified standard modes.
- \* And adjust trapezoidal using control buttons(two H-SIZE + S-PIN)

### 8-7. Parallelogram Adjustment

- \* Receive cross hatch pattern signal of all specified standard modes.
- \* And adjust parallelogram using control buttons( two V-SIZE + S-PIN)

## 8-8. Recall

### 1) In preset mode( 12 modes)

\*In case you press this button, the factory adjusted screen will be displayed accordings to currently using mode.

### 2) In user mode( 8 modes).

\*In case this is not operate.(auto memory)

## 8-9. Reset pre-set

\*In case you press these buttons(H-SIZE(D) + V-SIZE(I)), the current displaying screen will be copied the factory adjusted screen.

## 8-10. Video Circuit Adjustment

### 1) Controls function.

\*Brightness volume(VR803)

This knob controls the black level of the image.

\*Sub-Brightness Control(VR802).

This control is used for adjusting the cut-off point of the raster after the brightness control set to maximum.

\*R. G. B, gain volumes(VR401, VR402, VR403).

These volumes control the gain of RED, GREEN, BLUE video pre-amplifier.

\*R. G. B, bias volume(VR431R, VR431G, VR431B).

These volumes control the bias voltage of RED, GREEN, BLUE cathode of CDT.

\*Screen volume(On the FBT).

This volume controls the screen voltage of the CDT.

\*Contrast volume(VR404).

This knob controls the contrast of the image. It establishes the gain of the video amplifier but does not affect the raster luminance.

\*Focus volume(On the FBT).

This volume controls the focus of the picture.

## 8-11. White Balance Adjustment

\* Adjust R. G. B. gain and bias volumes to mechanical center.

\* Operate the set for 15 minutes to warm up.

\* Degauss the CDT face fully with degaussing tool.

\* Adjust screen volume for the luminance of the raster equal to 1~2 F/L.

\* Adjust bias volume of R. G. B. so that the color of the raster may become white.

\* Now adjust the sub-bright volumn for the luminance of the raster equal to 0.1~2F/L MAX.(without video signal)

\* Receive a full white pattern signal(Mode No. 7).

\* Adjust R. G. B. gain volume for the specified white color.

Use the color analyzer equipment.

※ Standard color coordinate(@ 10 F/L, 25 F/L).

$X=0.281 \pm 0.02$ ,  $Y=0.311 \pm 0.02$

※ Maximum brightness : 27~40F/L.

• With full white pattern(Mode No. 7)

• Brightness V/R : Set to maximum.

• Contrast V/R : Set to maximum.

• Checking area : Center of display.

## 8-12. Flashover Protection

Due to the high voltage in this tube(CRT), internal flashover occurs.

Protection must be provided using spark gap to prevent flashover from destroying the cathode or other internal circuits.

These spark gaps shall be connected with each electrode in socket PCB assembly.

### 8-13. Focus Adjustment

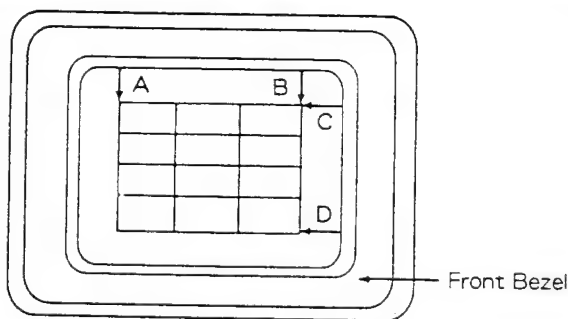
- \* Display the character pattern so that adjust the focus can be done. (the highest resolution is recommended)
- \* Turn the contrast and the brightness controls fully clockwise.
- \* Adjust the focus control of FBT, so that the focus is to be at the best condition.

### 8-14. Purity Adjustment

- \* Be sure that the display is not exposed to any external magnetic fields.
- \* Ensure that the spacing between the convergence purity magnet (CPM) assembly and the CRT stem is  $29\text{mm} \pm 1\text{mm}$
- \* Produce a complete, red pattern on display. Adjust the purity magnet rings on the CPM assembly to obtain a complete field of the color red. This is done by moving the two tabs in such a manner that they advance in an opposite direction but at the same time to obtain the same angle between the two tabs, which should be approximately  $180^\circ$
- \* Check the complete blue and complete green patterns to observe their respective color purity. Make minor adjustment be needed.

### 8-15. CRT Tilt Adjustment

- \* Reassemble the CRT with fastening screws so that the dimension A, B and C, D are separately equal.



### 8-16. Static (Center) Convergence

- \* Switch the monitor on and warm up for 15 minutes. Operate the computer in such a way that the cross hatch pattern is displayed on screen. Convergence error should not exceed than following table.

Position	Error In (mm)	CRT Dot-Pitch
Center	0.3	0.28
corner	0.4	0.28

- \* Proceed as follows :

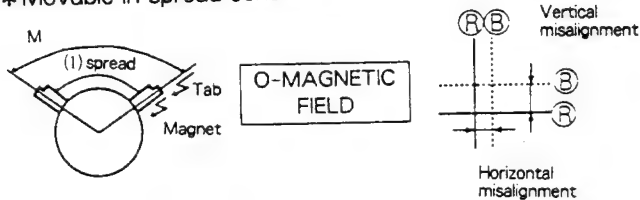
- ① Locate the pair of four pole magnet rings.
- ② Rotate the individual rings (change spacing between tabs) to converge the vertical red and blue lines.
- ③ Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue lines.
- ④ After completing the red and blue center convergence, locate the pair of six pole magnet ring.
- ⑤ Rotate the individual rings (change spacing between tabs) to converge the vertical red and blue (magenta) and green lines.
- ⑥ Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue (magenta) and green lines.
- ⑦ Magnet position is 2 pole/4 pole/6 pole (from the front of CRT).
- ⑧ Don't rotate the 2 pole magnet because its object is to adjust the purity.

## 8-17. Dynamic Convergence

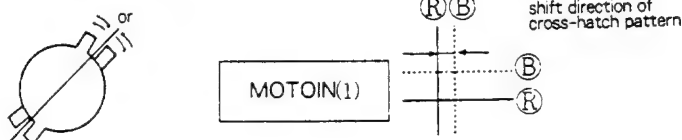
\* Dynamic convergence (convergence of the three color fields at the edge of the CRT screen) is accomplished by the proper insertion and positioning of the three wedges between the edge of deflection yoke and the funnel of the CRT.

### 1) Alignment of (R) and (B) with the 4pole magnet

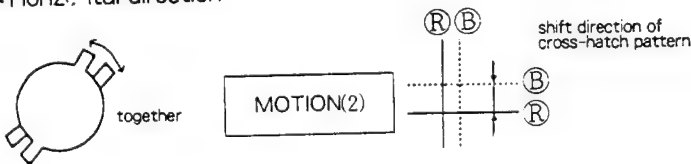
\* Movable in spread condition



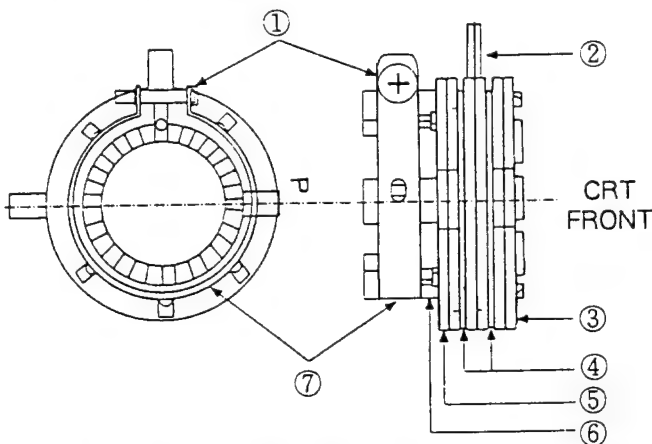
\* Vertical direction



\* Horizontal direction

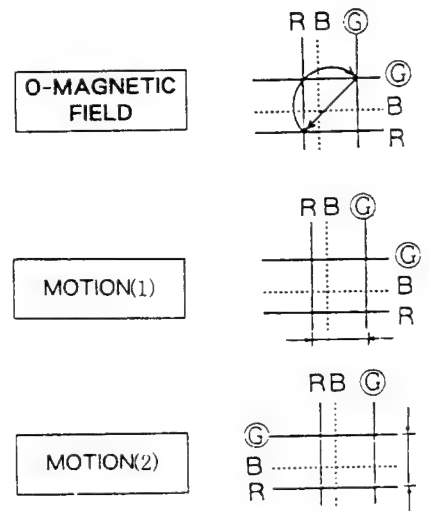


※ Convergence Purity Magnet



- ① Setup Bolt      ② 4 pole Magnet      ③ Purity Magnet (2 pole Magnet)
- ④ Spacers        ⑤ 6 pole Magnet      ⑥ Holder            ⑦ Band

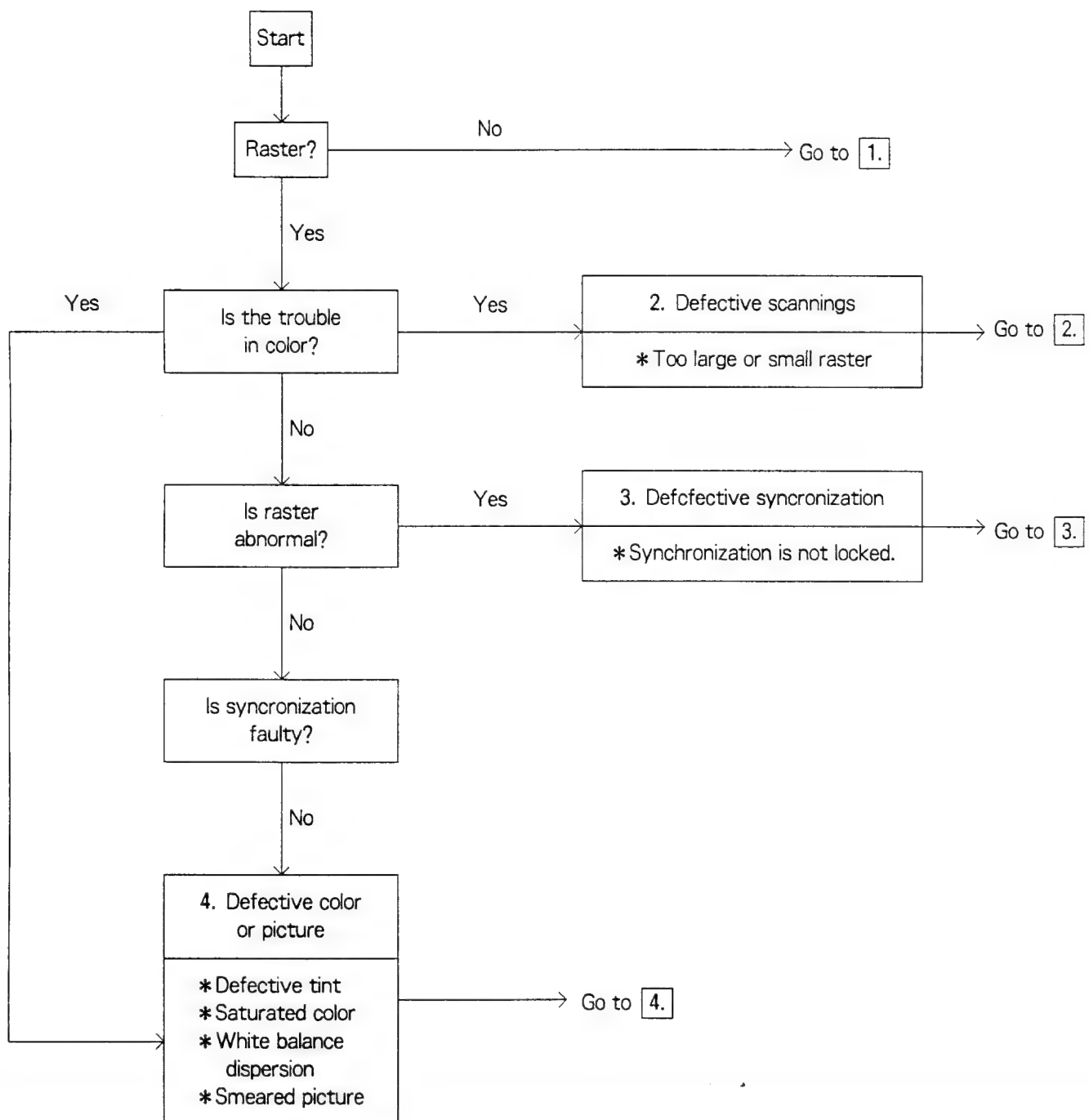
### 2) Alignment of (R) and (B) with (G) (6 pole magnet)

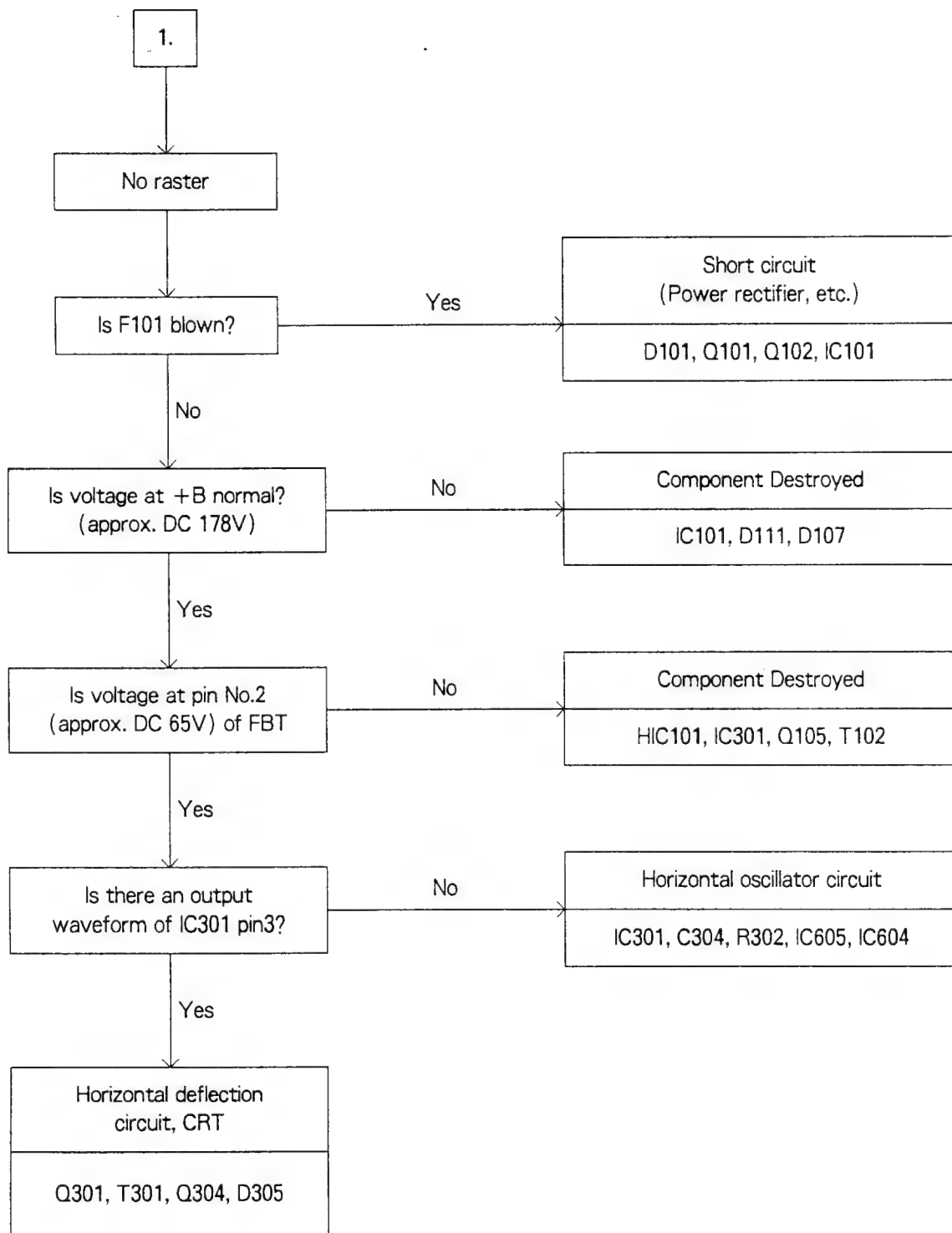


## 9. Trouble Shooting

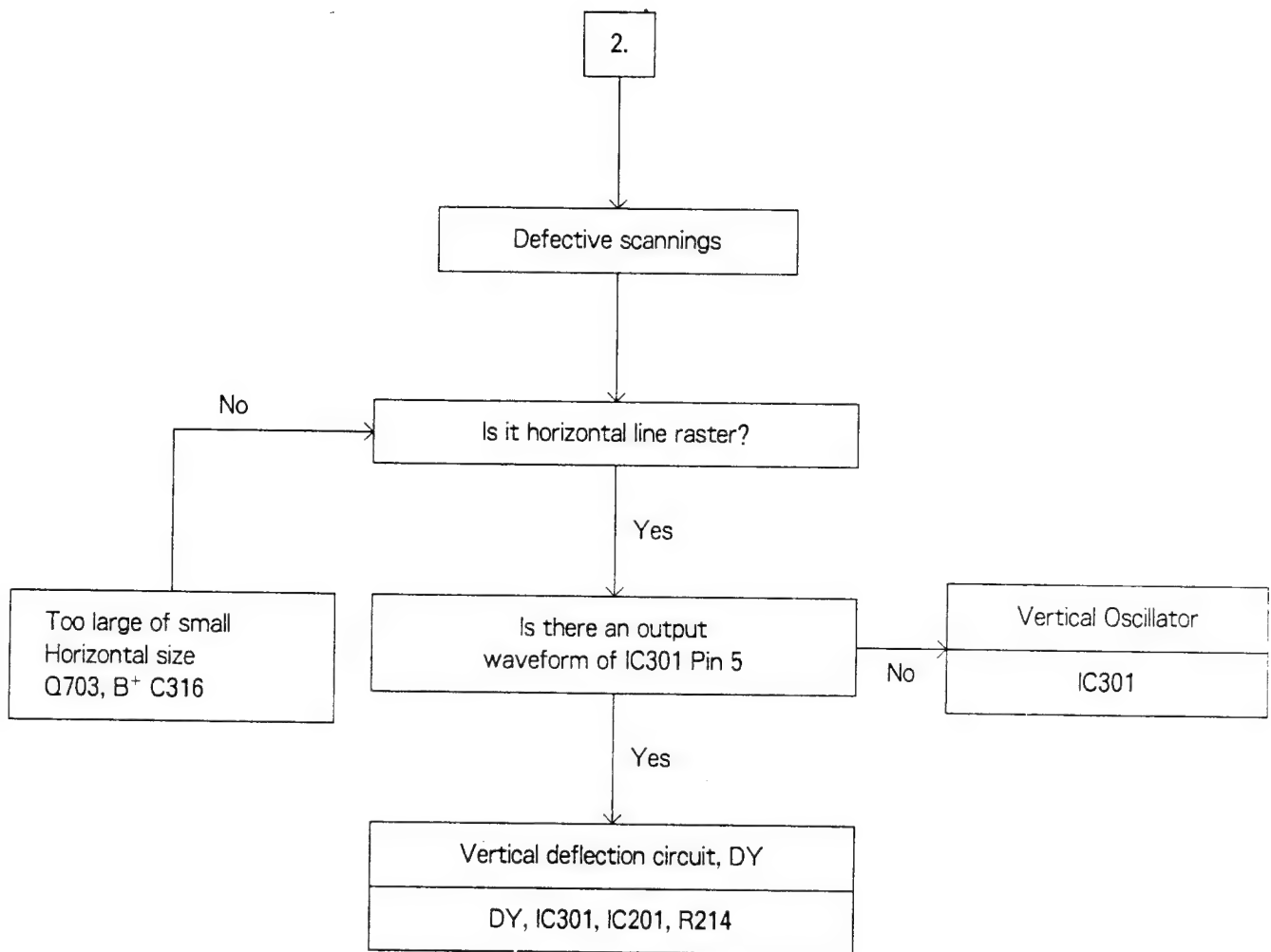
### [Note]

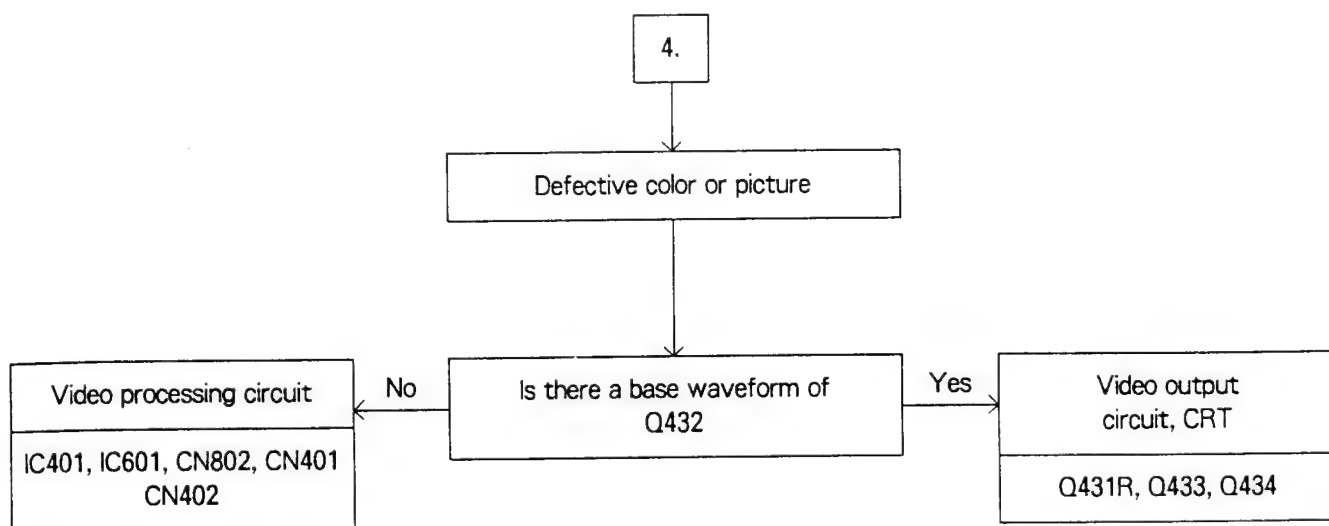
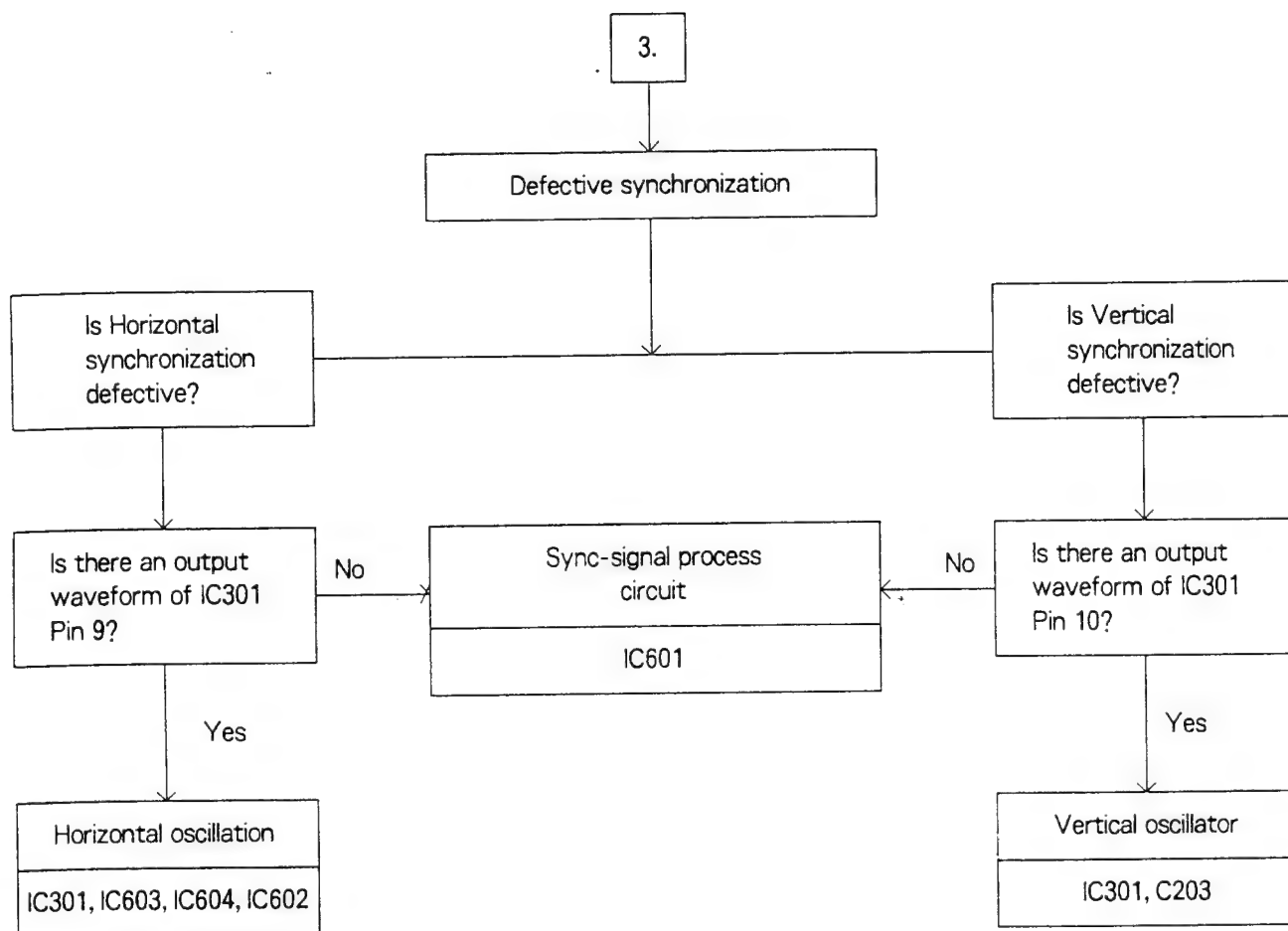
1. If picture does not appear, fully rotate the brightness and contrast control clockwise before inspection.
2. Circuit to be checked
  - ① No raster appear : Power circuits, Horizontal output circuits
  - ② A high voltage develops but no raster appears : Video output circuits
  - ③ A high voltage is not developed : Horizontal output circuits.





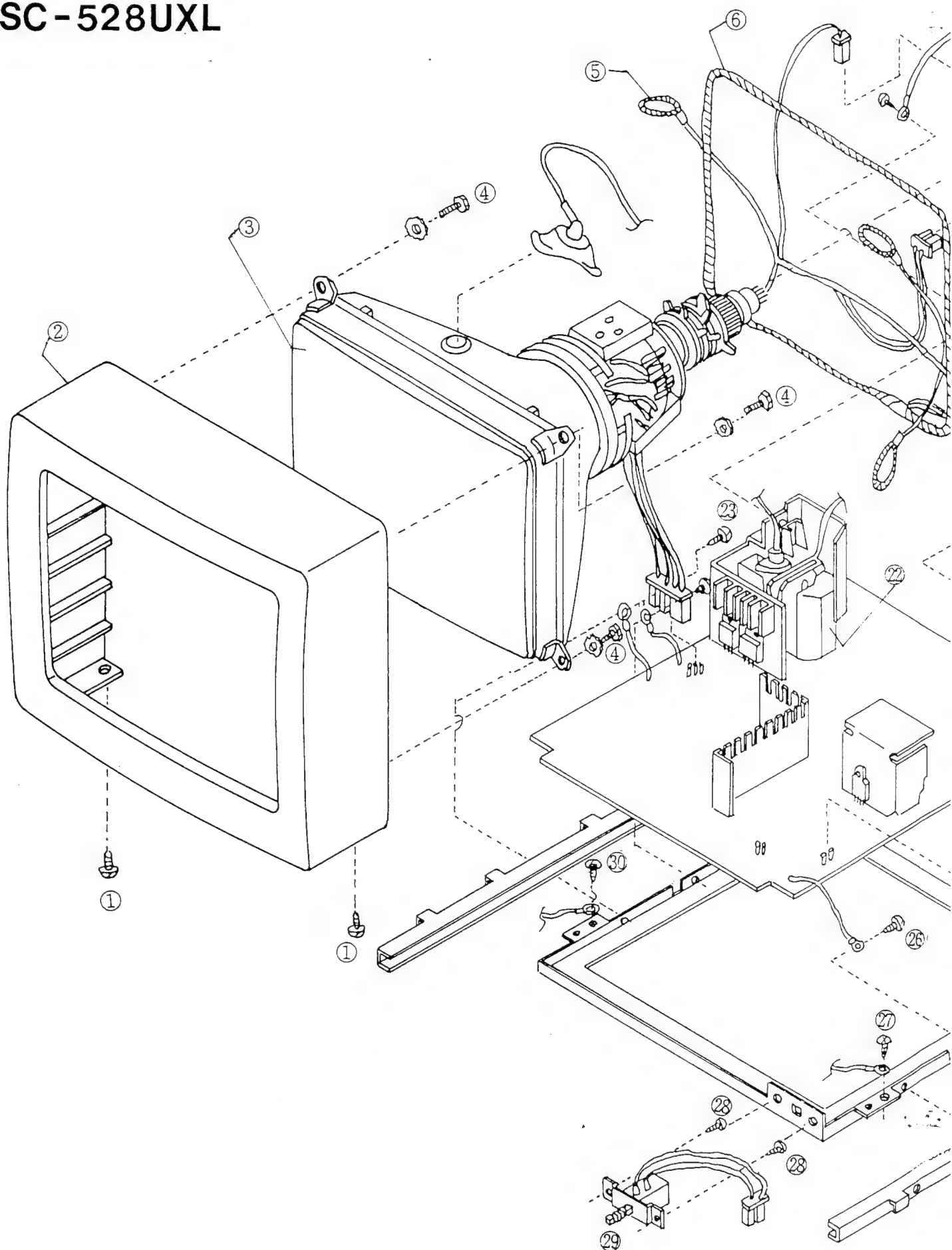


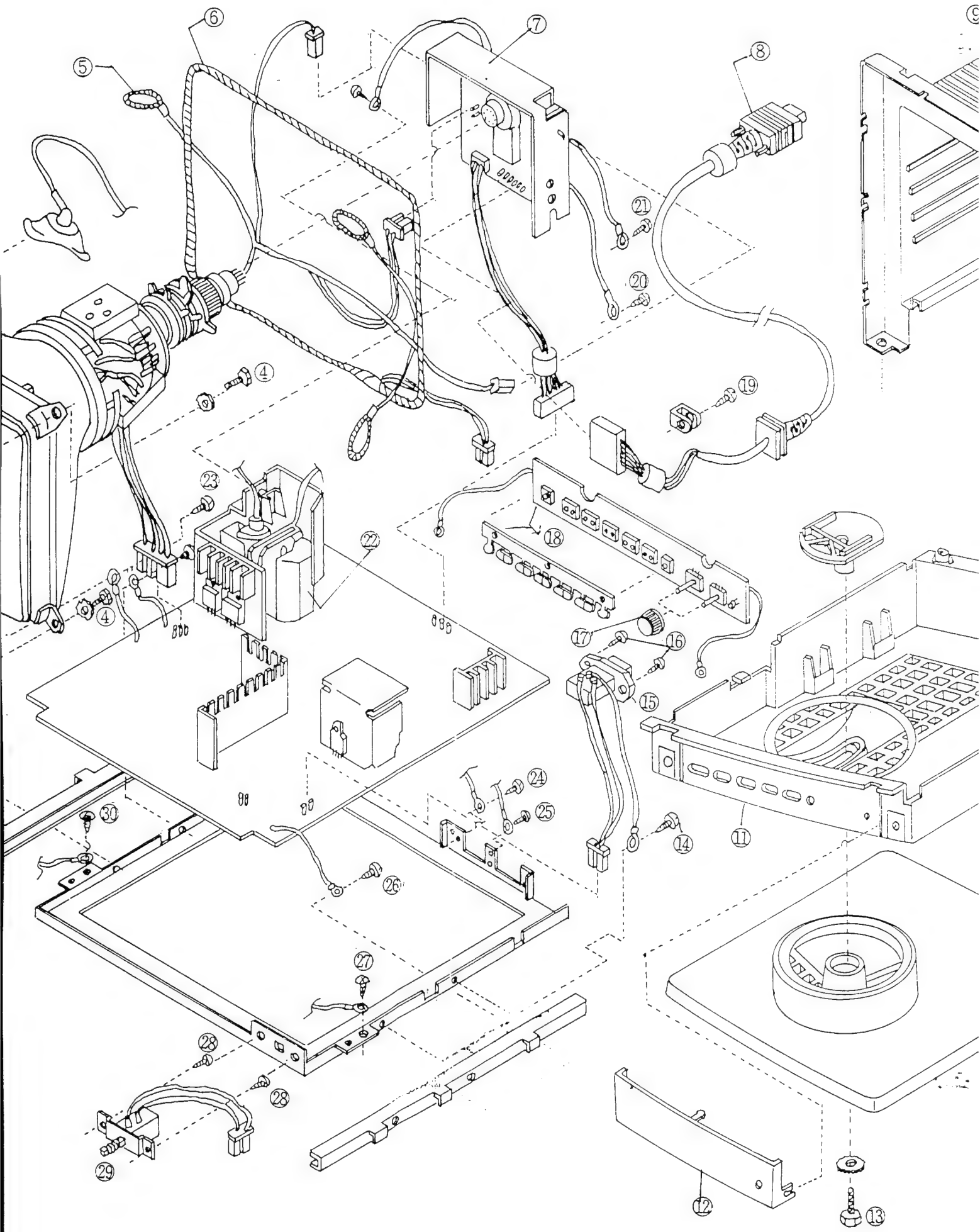


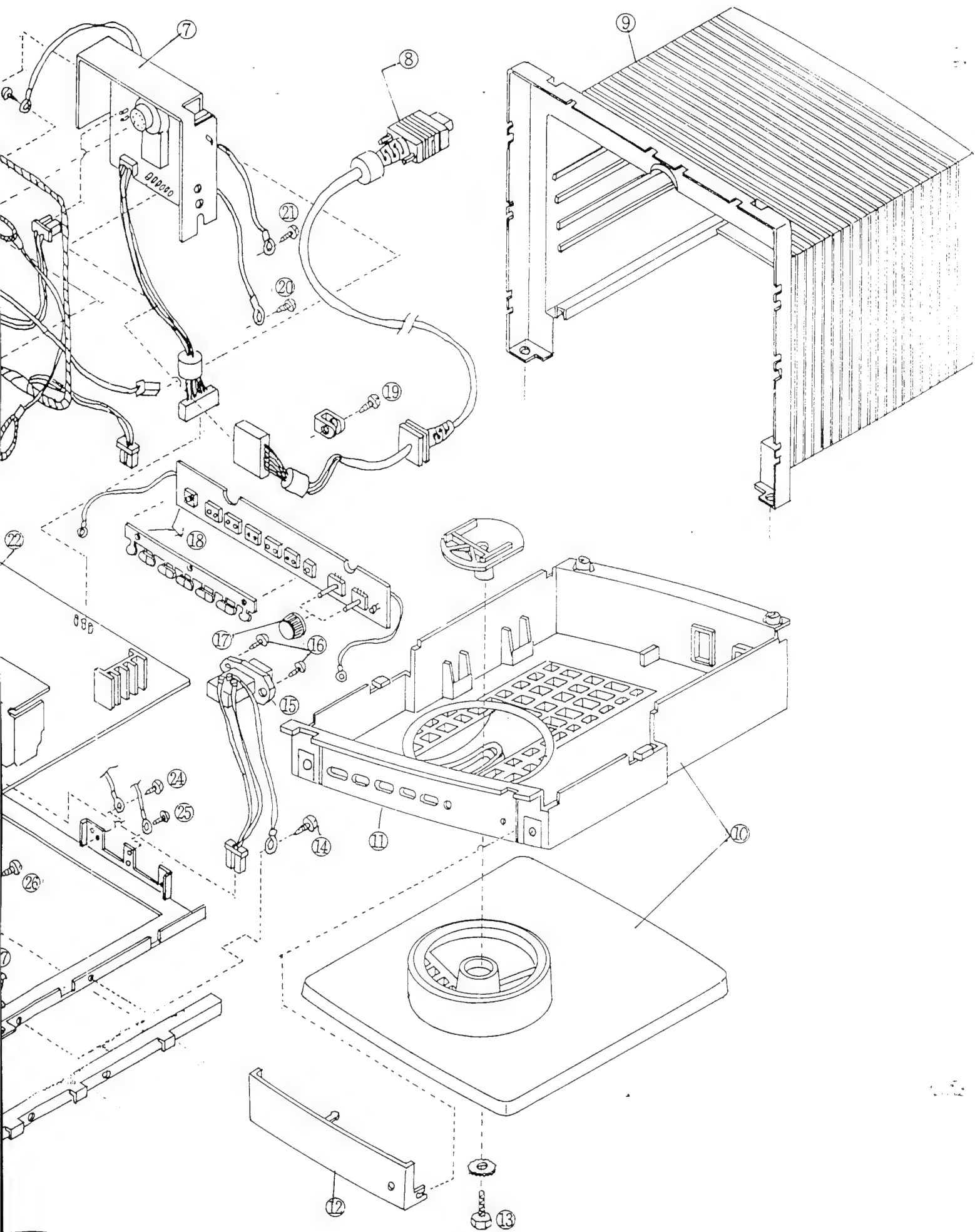


## 10. Exploded View

### SC-528UXL



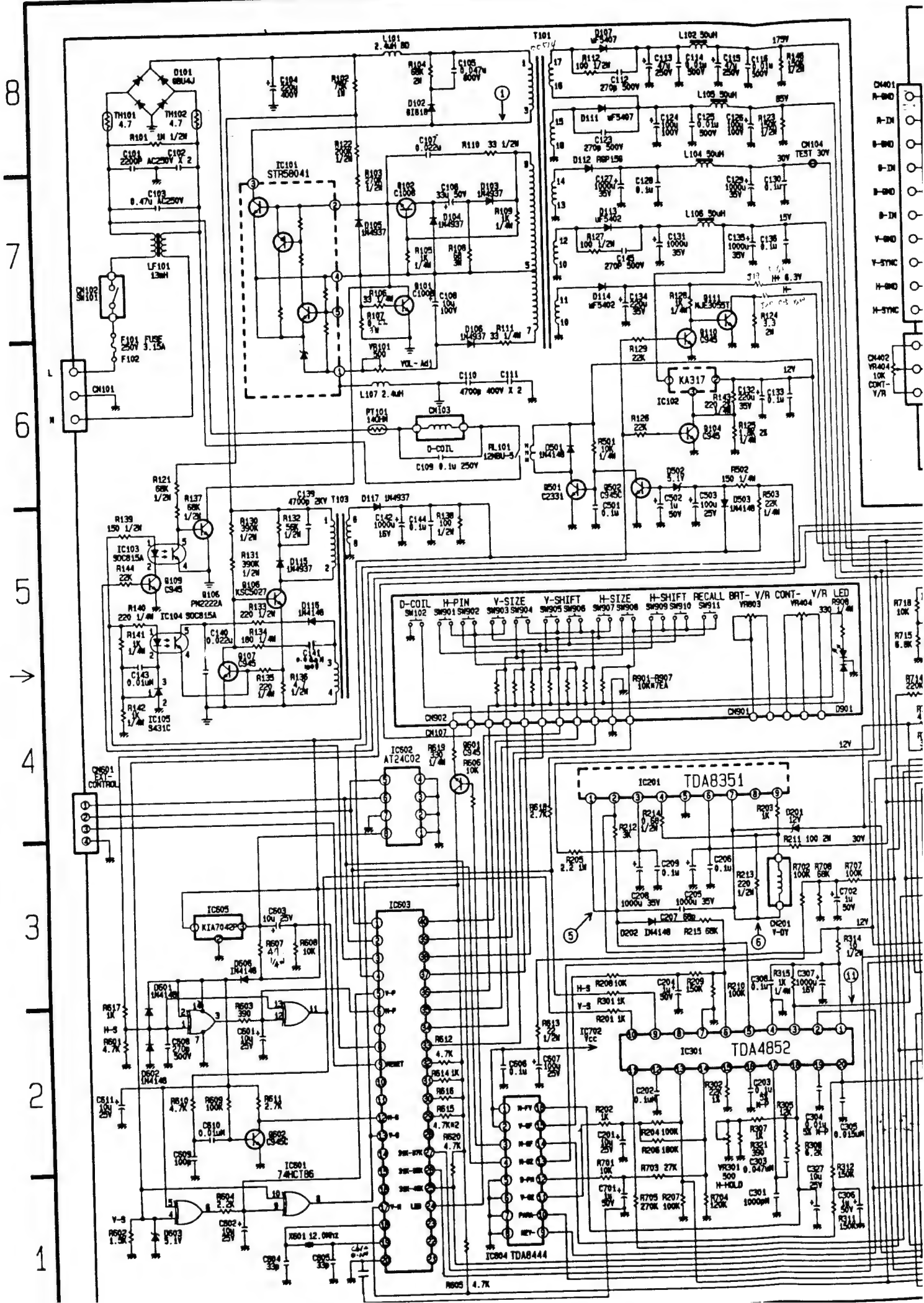




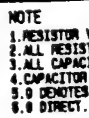
## Exploded View and Part List

NO.	Code	Description	Spec
1	3361200259	PS+, PAN, ZPW	M4.5 * 14, SWRCH1018AK
2	0212101336	ASS'y, Front Bezel	OEM-3357
3	0121100502	Ass'y, CDT	M36KUK35 * 03, 0.28D, 15", +380MG
3	0121100696	Ass'y, CDT	M36KUK35 * 03, 0.28D, 15", -500MG
4	3364200024	PS+, HEX, W/S.W, ZPW	M4.5 * 24, SWRCH1018AK, WD : 16
5	3643700473	Braid Wire, CDT GND	685MM, 2 * 330MM, 1P, 260MM, 2P, 0.1 * 3 * 1
6	1722400208	Coil, Degaussing	115 +/-1TS, 0.45, 13.7 OHM, 1040MM
7	0112300286	Sub Ass'y, DPT Socket	SC-528UXL
8	3654100701	Cable Signal, Non-Det	15P, 1705(1500MM), BK
9	0212101348	Ass'y, Rear Cover	OEM-3357
10	0212101693	Ass'y, Stand	OEM-3357
11	0212101363	Ass'y, Bottom	OEM-3357
12	3261103987	PLA, Cover, Control	210 * 31 * 21.5, ABS, OEM-3357
13	3364200024	PS+, HEX, W/S.W, ZPW	M4.5 * 24, SWRCH1018AK, WD : 16
14	3316800024	MS+, BND, W/T.L.W, ZPW	M4 * 8, SRCH1018AK
15	0117400223	Sub Ass'y, Back Chassis	AC Socket
16	3348500012	TS+, OVAL, 2, ZPW	M3 * 12, SWRCH1018AK
17	3261104018	PLA, KNOB	D19 * D20 * 13.5, ABS, OEM-3357
18	0114700024	Sub Ass'y, Tact Switch	SC-528UXL
19	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
20	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
21	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
22	1712290259	FBT Color	Y262641, 64KHZ
23	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
24	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
25	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
26	3342500012	TS+, BND, W/P.W, B, ZPW	M3 * 8SWRCH1018AK
27	3361200259	PS+, PAN, ZPW	M4.5 * 14, SWRCH1018AK
28	3316200012	MS+, BND, ZPW	M3 * 6, SWRCH1018AK
29	1913190048	Push Switch	SPST, 4A/32A, 250V, 2P, J-U3065 # 01
30	3361200259	PS+, PAN, ZPW	M4.5 * 14, SWRCH1018AK

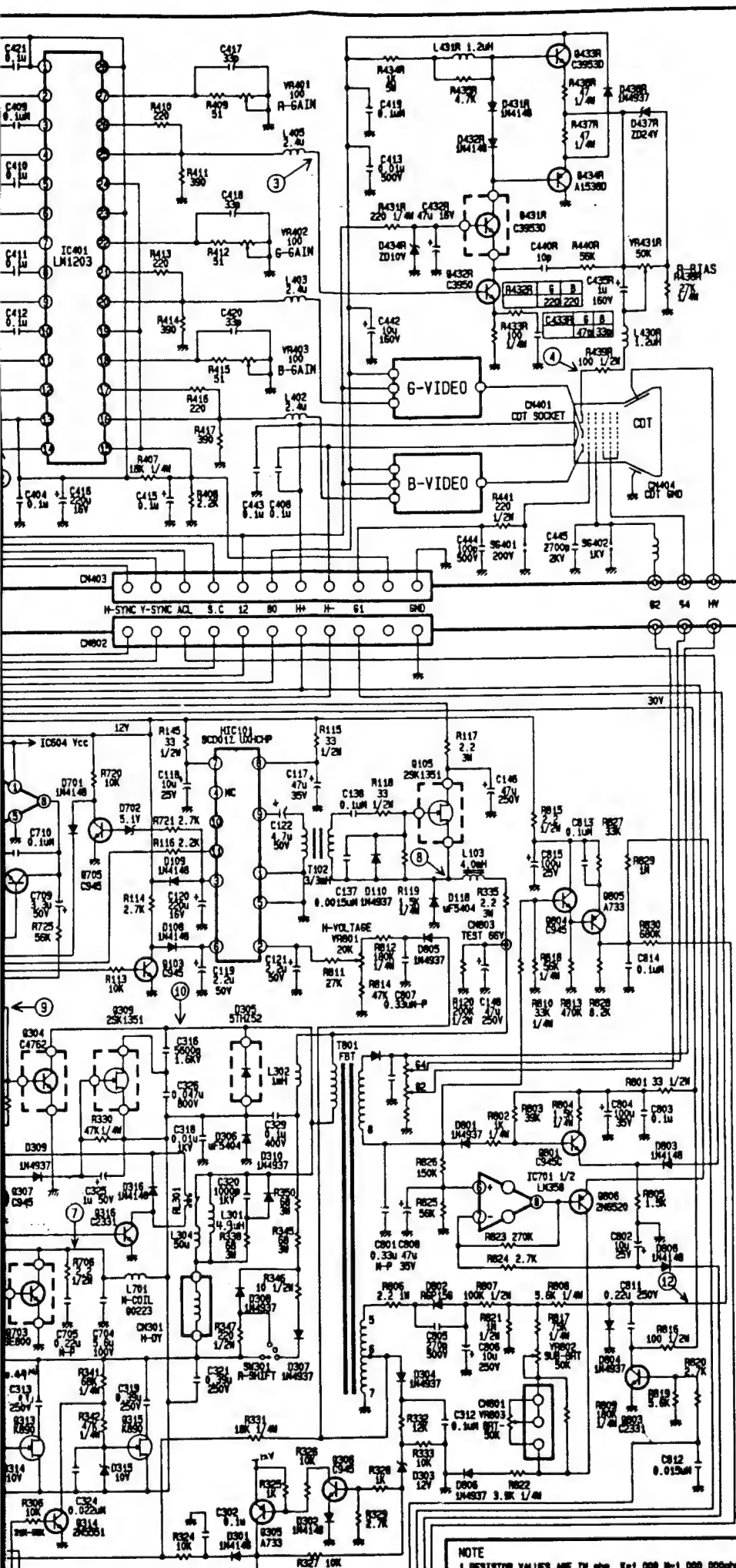
# 11. Schematic Diagram



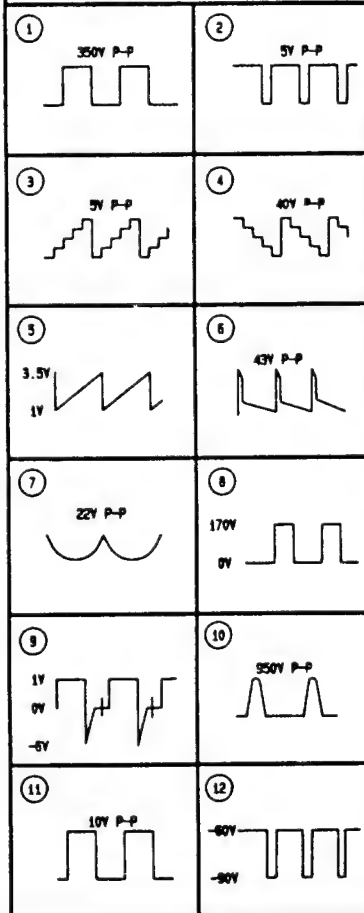






[illegible]

## VOLTAGE & WAVEFORMS



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TITLE SCHEMATIC & WAVEFORMS OF  
SC-528UXI

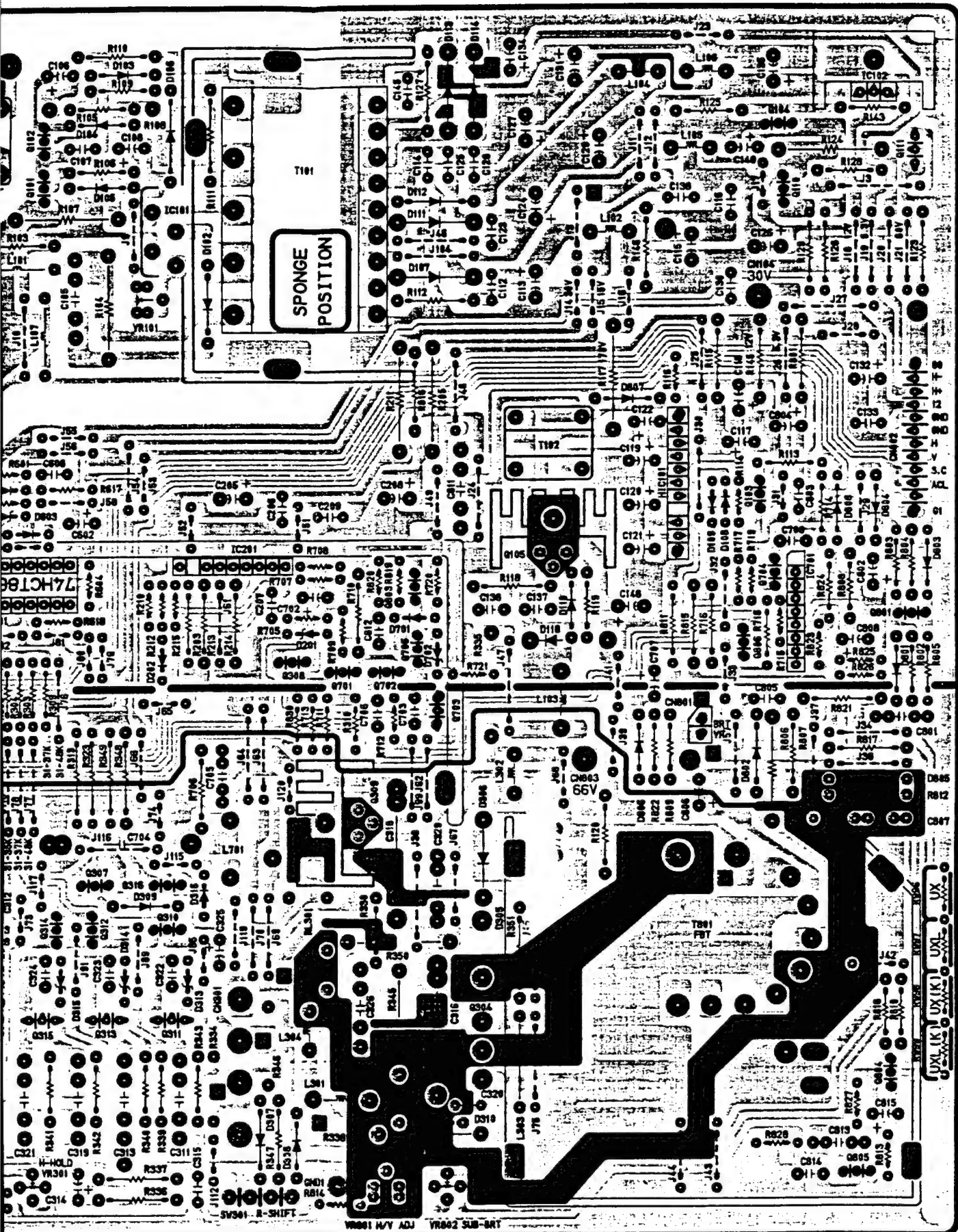
APPROVALS		DATE	PCB NAME	REV.
DRAWN	Y.N.KIN	1/2	1 MAIN	A
DESIGNED	K.M.KAMU	1/2	2 VIDEO/SOCKET	A
CHECKED	J.N.LOB	1/2	3 TACT S/W	A
APPROVED	S.H.JUNG	1/2		
DESIGN REVIEW		1/2		
CONSULTANT	S.K.HAN	1/2		
REF.			REV.: F	SIZE: A1
DWG. NO.	MS-148-***** DC (L)			SHEET: 1 OF

NOTE

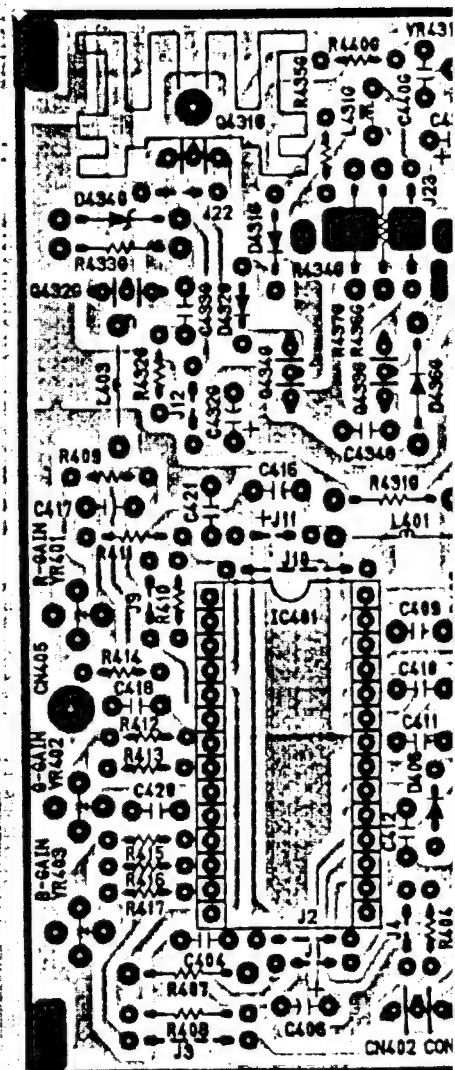
1. RESISTOR VALUES ARE IN OHMS. K=1,000 M=1,000,000ohms
2. ALL RESISTORS ARE 1/8W EXCEPT WHERE OTHERWISE INDICATED
3. ALL CAPACITORS ARE .001 EXCEPT WHERE OTHERWISE INDICATED
4. CAPACITOR VALUES ARE  $\mu$ F UNLESS OTHERWISE INDICATED
5. 0 DENOTES HOURLING CONNECTORS.
6. 0 DIRECT.

## 12-1. Main Board



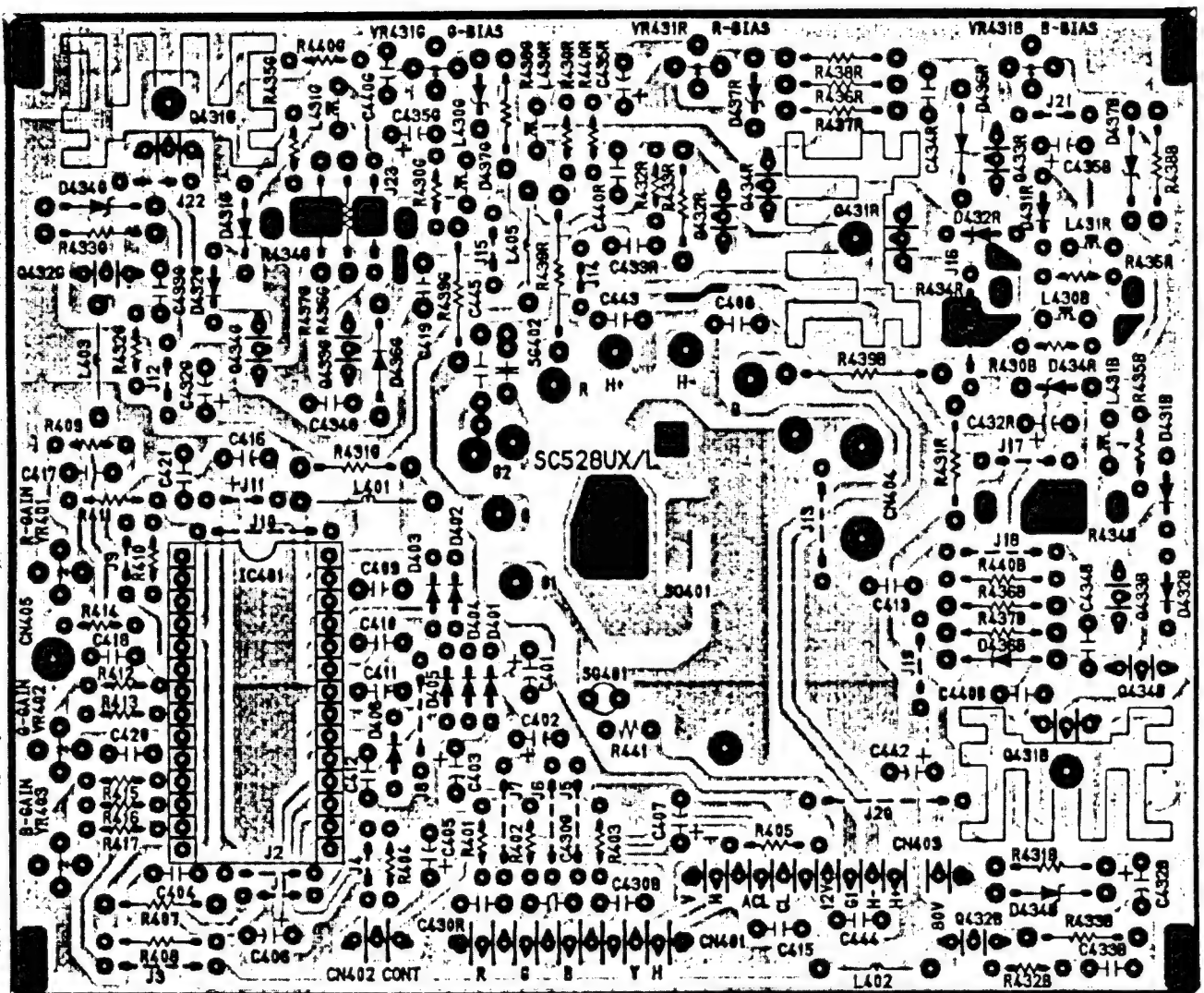


## 12-2. Socket Board





## 12-2. Socket Board



# 13. Parts List

## SUB ASS'Y, CDT ASS'Y

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	0112300286	SUB ASS'Y, CPT SOCKET	SC-528UX/UXL		
	0114100303	SUB ASS'Y, PUSH S/W	SC-528MX/MXL, 4A/32A, 2P, 190MM		
	0114700024	SUB ASS'Y, TACT SWITCH	SC-528UX/UXL		
	0116101351	SUB ASS'Y, HEAT SINK	SC-528MX/MXL, 2SK1351, 23.5 * 15 * 30, WH		
	0116101443	SUB ASS'Y, HEAT SINK	TOPAZ, KA317		
	0116101479	SUB ASS'Y, HEAT SINK	SC-428UX, 2SC3953E/D		
	0116101482	SUB ASS'Y, HEAT SINK	SC-428UX, MJE800/TDA8351		
	0116101508	SUB ASS'Y, HEAT SINK	SC-428UX,STR58041		
	0116101562	SUB ASS'Y, HEAT SINK	SC-528UX/L, C4762, 5THZ52		
	0116200075	SUB ASS'Y, SHIELD COVER	SC-528UX,UXL		
	0117400223	SUB ASS'Y, BACK CHASSIS	SC-528UXL, AC SOCKET		
	0121100502	ASS'Y, CDT	M36KUX35 * 03, 0.28D, 15", +380MG		
	0121100696	ASS'Y, CDT	M36KUX35 * 03, -500MG		
	MG14800805	PCB ASS'Y	FREE, ANALG, M.V.S		

## MECHANICAL ASS'Y

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	0211100589	ASS'Y, MAIN CHASSIS	SC-528MX(L)		
	0211100618	ASS'Y, HEAT SINK	SC-4000/L(3111400737)		
	0211100696	ASS'Y, HEAT SINK(TRANS)	471P/472P(3111400701+3111900051)		
	0211100752	ASS'Y, BRKT(FBT) SC-528UX/XUL	(3121102452, 3111900051/00048)		
	0212101312	ASS'Y, CONTROL COVER, SC-528MX(L)	OEM-3357		
	0212101336	ASS'Y, FRONT BEZEL, SC-528MXL	OEM-3357		
	0212101348	ASS'Y, REAR COVER, SC-528MX(L)	OEM-3357		
	0212101363	ASS'Y, BOTTOM, SC-528MX(L)	OEM-3357		
	0212101693	ASS'Y, STAND, SC-528UX/UXL	OEM-3357(SAMTRON)		
	0214101945	ASS'Y, MANUAL, USER'S, SC-528UX/L	SDI		
	0214101972	ASS'Y, MANUAL, USER'S, SC-528UX/L	SIA		
	0214102202	ASS'Y, MANUAL, USER'S, SC-528UX/L	EUROPE		

# CAPACITOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
C101	1315492226	CAP, METALZ-POLYESTER	2200PF, 10%, 250VAC, RB		
C102	1315492226	CAP, METALZ-POLYESTER	2200PF, 10%, 250VAC, RB		
C103	1315494746	CAP, METALZ-POLYESTER	0.47UF, 10%, 250VAC, RB		
C104	1123302277	CAP, AL-ELECT	220UF, 20%, 400V, -40/85°C,PT		
C105	1335504734	CAP, METALZ-PP, GP	0.047UF, 5%, 800V, RB, CF93MP, OEM		
C106	111950336B	CAP, AL-ELECT	33 UF, 20%, 50V, -40/85°C, RT, SMALL		
C107	1237101033	CAP, DISC CERAMIC, CK	0.01UF, -20%/80%, 50V, -25/85°C, RT		
C108	111960106B	CAP, AL-ELECT, GP	10UF, 20%, 100V, -40/85°C, RT, SMALL		
C109	1315391045	CAP, METALZ-POLYESTER	0.1 UF, 10%, 250VAC, RB		
C110	1230704722	CAP, DISC CERAMIC, CK	4700PF, 20%, 400VAC, -25/85°C, RT		
C111	1230704722	CAP, DISC CERAMIC, CK	4700PF, 20%, 400VAC, -25/85°C, RT		
C112	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, -25/85°C, RT		
C113	111980476C	CAP, AL-ELECT, GP	47UFM 20%M 250V, -40/85°C, RT		
C114	1233501033	CAP, DISC, CERAMIC, CK	0.01UF, -20/80%, 500V, -25/85°C, RT		
C115	111980476C	CAP, AL-ELECT, GP	47UF, 20%, 250V, -40/85°C, RT		
C116	1233501033	CAP, DISC, CERAMIC, CK	0.01UF, -20/80%, 500V, -25/85°C, RT		
C117	111940476B	CAP, AL-ELECT, GP	47UF, 20%, 35V, -40/85°C, RT, SMALL		
C118	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C119	1119502253	CAP, AL-ELECT, GP	2.2UF, 20%, 50V, -40/85°C, RT		
C120	1119202277	CAP, AL-ELECT, GP	220UF, 20%, 16V, -40/85°C, RT		
C121	1119502253	CAP, AL-ELECT, GP	2.2UF, 20%, 50V, -40/85°C, RT		
C122	111950475B	CAP, AL-ELECT, GP	4.7UF, 20%, 50V, -40/85°C, RT, SMALL		
C123	1233402716	CAP,DISC CERAMIC, CK-45	270UF, 10%, 500V, -25/85°C, RT		
C124	1119601072	CAP,AL-ELECT, GP	100UF, 100V, 20%, -40/85°C, RT		
C125	1233501033	CAP,DISC, CERAMIC, CK	0.01UF, -20/80%, 500V, -25/85°C, RT		
C126	1119601072	CAP,AL-ELECT, GP	100UF, 100V, 20%, -40/85°C, RT		
C127	1119401084	CAP,AL-ELECT, GP	1000UF, 20%, 35V, -40/85°C, RT		
C128	1237101045	CAP,DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C129	1119401084	CAP,AL-ELECT, GP	1000UF, 20%, 35V, -40/85°C, RT		
C130	1237101045	CAP,DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C131	1119401084	CAP,AL-ELECT, GP	1000UF, 20%, 35V, -40/85°C, RT		

## CAPACITOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
C132	1119402277	CAP, AL-ELECT, GP	220UF, 20%, 35V, -40/85'C, RT		
C133	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85'C, RT		
C134	1119402277	CAP, AL-ELECT, GP	220UF, 20%, 35V, -40/85'C, RT		
C135	1119401084	CAP, AL-ELECT, GP	1000UF, 20%, 35V, -40/85'C, RT		
C136	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20%, 50V, -25/85'C, RT		
C137	1312601523	CAP, IND-POLYESTER	0.0015UF, 10%, 100V, RT, CQ92MT		
C138	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C139	1224604722	CAP, DISC CERAMIC, CK-45	4700PF, 10%, 2KV, -25/85'C, EPOXY, RB		
C140	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85'C, RT		
C140	1237102238	CAP, DISC CERAMIC, CK45	0.022UF, -20/80%, 50V, -25/85'C, RT,HDC		
C141	1312604734	CAP, IND-POLYESTER	0.047UF, 10%, 100V, -, RT		
C142	1119201084	CAP, AL-ELECT, GP	1000UF 16V, 20%, -40/85'C, RT		
C143	1312601033	CAP, IND-POLYESTER	0.01UF, 10%, 100V, RT, CQ92MT		
C144	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85'C, RT		
C145	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, -25/85'C, RT		
C146	111980476C	CAP, AL-ELECT, GP	47UF, 20%, 250V, -40/85'C, RT		
C148	111980476C	CAP, AL-ELECT, GP	47UF, 20%, 250V, -40/85'C, RT		
C201	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85'C, RT, SMALL		
C202	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C203	1319101045	CAP, METALZ-POLYESTER	0.1UF, 100V, 5% RT		
C204	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, -40/85'C, RT, SMALL		
C205	1119401084	CAP, AL-ELECT, GP	1000UF, 20%, 35V, -40/85'C, RT		
C206	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85'C, RT		
C207	1218206805	CAP, DISC CERAMIC, CC	68PF, 5%, 50V, -25/85'C, RT		
C208	1119401084	CAP, AL-ELECT, GP	1000UF, 20%, 35V, -40/85'C, RT		
C209	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85'C, RT		
C301	1312601021	CAP, IND-POLYESTER	0.001UF, 10%, 100V, RT		
C302	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85'C, RT		
C303	1312604734	CAP, IND-POLYESTER	0.047UF, 10%, 100V, -, RT		
C304	1318201033	CAP, METALZ POLYESTER	0.01UF, 5%, 100V, RB		
C305	1312601535	CAP, IND-POLYESTER	0.015UF, 10%, 100V, RT		
C306	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, -40/85'C, RT, SMALL		



# CAPACITOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
C307	1119201084	CAP, AL-ELECT, GP	1000UF, 16V, 20%, -40/85°C, RT		
C308	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C309	111950475B	CAP, AL-ELECT, GP	4.7UF, 20%, 50V, -40/85°C, RT, SMALL		
C310	1312601523	CAP, IND-POLYESTER	0.0015UF, 10%, 100V, RT, CQ92MT		
C311	1335401841	CAP, METALZ-PP	0.18UF, 5%, 250V, RB		
C312	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C313	1335404746	CAP, METALZ-PP	0.47UF, 5%, 250V, RB		
C314	1119401072	CAP, AL-ELECT, GP	100UF, 20%, 35V, -40/85°C, RT		
C315	1233104722	CAP, DISC CERAMIC, CK	4700PF, 10%, 50V, -25/85°C, RT		
C316	1331705624	CAP, PP, HIGH-VOL	5600PF, 5%, 1.6KV, RB		
C318	1331501033	CAP, PP	0.01UF, 5%, 1KV, RB		
C319	1335403948	CAP, METALZ-PP	0.39UF, 5%, 250V, RB		
C320	1233301021	CAP, DISC CERAMIC, CK	1000PF, 10%, 1KV, -25/85°C, RT		
C321	1335403948	CAP, METALZ-PP	0.39UF, 5%, 250V, RB		
C322	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, -, RT		
C323	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, -, RT		
C324	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, -, RT		
C325	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, -40/85°C, RT, SMALL		
C326	1335504734	CAP, METALZ-PP, GP	0.047UF, 5%, 800V, RB, CF93MP, OEM		
C327	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C328	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C329	1315601045	CAP, METALZ-POLYESTER	0.1UF, 10%, 400VAC, RB		
C401	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, -40/85°C, RT, SMALL		
C402	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, -40/85°C, RT, SMALL		
C403	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, -40/85°C, RT, SMALL		
C404	1237101045	CAP, DISC CERAMIC, DK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C405	111920107B	CAP, AL-ELECT, GP	100UF, 20%, 16V, -40/85°C, RT, SMALL		
C406	111950475B	CAP, AL-ELECT, GP	4.7UF, 20%, 50V, -40/85°C, RT, SMALL		
C407	111920107B	CAP, AL-ELECT, GP	100UF, 20%, 16V, -40/85°C, RT, SMALL		
C408	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C409	1312201045	CAP, IND-POLYESTER	0.1UF, 5%, 100V, RT		
C410	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		

## CAPACITOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
C411	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C412	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
8C413S	1233501033	CAP, DISC CERAMIC, CK	0.01UF, -20/80%, 500V, -25/85°C, RT		
C415	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C416	1119202277	CAP, AL-ELECT, GP	220UF, 20%, 16V, -40/85°C, RT		
C417	1218203303	CAP, DISC CERAMIC, CC45	33F, 5%, 50V-25/85°C, RT, TC		
C418	1218203303	CAP, DISC CERAMIC, CC45	33F, 5%, 50V-25/85°C, RT, TC		
C419	1312201045	CAP, IND-POLYESTER	0.1UF, 5%, 100V, RT		
C420	1218203303	CAP, DISC CERAMIC, CC45	33PF, 5%, 50V-25/85°C, RT, TC		
C421	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C430R, G, B	1218206805	CAP, DISC CERAIC, CC	68PF, 5%, 50V, -25/85°C, RT		
C432R, B	111920476B	CAP, AL-ELECT, GP	47UF, 20%, 16V, -40/85°C, RT, SMALL		
C433B	1218203303	CAP, DISC CERAMIC, CC45	33PF 5%, 50V-25/85°C, RT, TC		
C433G	1218204707	CAP, DISC CERAMIC, CC	47PF, 5%, 50V, -25/85°C, RT		
C435R, G, B	1119701057	CAP, AL-ELECT, GP	1UF, 20%, 160V, -40/85°C, RT		
C440R, G, B	1238101006	CAP, DISC CERAMIC, CC	10PF, 0.5PF, 50V, -25/85°C, RT		
C442	111960106B	CAP, AL-ELECT, GP	10UF, 20%, 100V, -40/85°C, RT, SMALL		
C443	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C444	1233401018	CAP, DISC CERAMIC, CK45	100PF, 10%, 500V, -25/85°C, RT, HDC		
C445	1233202728	CAP, DISC CERAMIC, CK	2700PF, 10%, 2KV, -25/85°C, RT		
C501	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C502	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, -40/85°C, RT, SMALL		
C503	111930107B	CAP, AL-ELECT, GP	100UF, 20%, 25V, -40/85°C, RT, SMALL		
C601	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C602	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C603	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C604	1218203303	CAP, DISC CERAMIC, CC45	33PF, 5%, 50V, -25/85°C, RT, TC		
C605	1218203303	CAP, DISC CERAMIC, CC45	33PF, 5%, 50V, -25/85°C, RT, TC		
C606	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C607	111930107B	CAP, AL-ELECT, GP	100UF, 20%, 25V, -40/85°C, RT, SMALL		
C608	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, -25/85°C, RT		
C609	1218201018	CAP, DISC CERAMIC, CC	100PF, 5%, 50V, -25/85°C, RT		

# CAPACITOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
C610	1312601033	CAP, IND-POLYESTER	0.01UF, 10%, 100V, RT, CQ92MT		
C611	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C612	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C701	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, -40/85°C, RT, SMALL		
C702	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, -40/85°C, RT, SMALL		
C703	1312601021	CAP, IND-POLYESTER	0.001UF, 10%, 100V, RT		
C704	1318205651	CAP, METALZ-POLYESTER	5.6UF, 5%, 100V, RB		
C705	131620224B	CAP, METALZ-POLYESTER	0.22PF, 100V, 10%, RT		
C706	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C707	111930107B	CAP, AL-ELECT, GP	100UF, 20%, 25V, -40/85°C, RT, SMALL		
C708	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C709	1119503354	CAP, AL-ELECT, GP	3.3UF, 20%, 50V, -40/85°C, RT		
C710	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C801	131620334B	CAP, METALZ-POLYESTER	0.33UF, 100V, 10%, RT		
C802	111930106B	CAP, AL-ELECT, GP	10UF, 20%, 25V, -40/85°C, RT, SMALL		
C803	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, -20/80%, 50V, -25/85°C, RT		
C804	1119401072	CAP, AL-ELECT, GP	100UF, 20%, 35V, -40/85°C, RT		
C805	1233402716	CAP, DISC CERAMIC, CK-45	270UF, 10%, 500V, -25/85°C, RT		
C806	1119801069	CAP, AL-ELECT, GP	10UF, 20%, 250V, -40/85°C, RT		
C807	131620334B	CAP, METALZ-POLYESTER	0.33UF, 100V, 10%, RT		
C808	111940476B	CAP, AL-ELECT, GP	47UF, 20%, 35V, -40/85°C, RT, SMALL		
C811	1335402241	CAP, METALZ-PP	0.22UF, 5%, 250V, RB		
C812	1312601535	CAP, IND-POLYESTER	0.15UF, 10%, 100V, RT		
C813	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C814	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C815	111930107B	CAP, AL-ELECT, GP	100UF, 20%, 25V, -40/85°C, RT, SMALL		
SG402	139110002B	CAP, SPARK-GAP	1KV, S-23		

# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
J19	141420R508	RES, CARBON, AT	0.5 OHM, 1/2W, 5%		
J20	141420R508	RES, CARBON, AT	0.5 OHM, 1/2W, 5%		
J26	1413302214	RES, CARBON, AT	220 OHM, 1/4W, 2%		
R101	1414201057	RES, CARBON, AT	1M OHM, 1/2W, 5%		
R102	143360753B	RES, METAL OXIDE, AT	75K OHM, 1WV, 5%		
R103	1414202743	RES, CARBON, AT	270K OHM, 1/2W, 5%		
R104	1434606832	RES, METAL OXIDE, AT	68K OHM, 2W, 5%, 63MM TAPING		
R105	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R106	1413403303	RES, CARBON, AT	33 OHM, 1/4W, 5%		
R107	146250R229	RES, WIRE WOUND, AT	0.22UF OHM, 3WV, 5%, 63MM T		
R108	1435506805	RES, METAL OXIDE, AT	68 OHM, 3W%, 5%, 63MM		
R109	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R110	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R111	1413403303	RES, CARBON, AT	33 OHM, 1/4W, 5%		
R112	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R113	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R114	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R115	1414203303	RES, CARBON, AT	33 OHM, 1/2, 5%		
R116	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R117	1462502R22	RES, WIRE WOUND AT	2.2 OHM, 3W, 5%, 63MM T		
R118	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R119	1413406829	RES, CARBON, AT	6.8K OHM, 1/4W, 5%		
R120	1414202042	RES, CARBON, AT	200K OHM, 1/2W, 5%		
R121	1414205636	RES, CARBON, AT	56K OHM, 1/2W, 5%		
R122	1414202042	RES, CARBON, AT	200K OHM, 1/2W, 5%		
R123	1414201547	RES, CARBON, AT	150K OHM, 1/2W, 5%		
R124	1461503R31	RES, WIRE WOUND, AT	3.3 OHM, 2W, 5%, 63MM T		
R125	1413301826	RES, CARBON, AT	1.8K OHM, 1/4W, 2%		
R126	1441302238	RES, METAL, AT	22K OHM, 1/8W, 1%		
R127	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R128	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		

# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R129	1441302238	RES, METAL, AT	22K OHM, 1/8W, 1%		
R130	1414203948	RES, CARBON, AT	390K OHM, 1/2W, 5%		
R131	1414203948	RES, CARBON, AT	390K OHM, 1/2W, 5%		
R132	1414205636	RES, CARBON, AT	56K OHM, 1/2W, 5%		
R133	1414202214	RES, CARBON, AT	220 OHM, 1/2W, 5%		
R134	1413401814	RES, CARBON, AT	180 OHM, 1/4W, 5%		
R135	1413302214	RES, CARBON, AT	220 OHM, 1/4W, 2%		
R136	1414204R76	RES, CARBON, AT	4.7 OHM, 1/2W, 5%		
R137	1414205636	RES, CARBON, AT	56K OHM, 1/2W, 5%		
R138	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R139	1414201511	RES, CARBON, AT	150 OHM, 1/2W, 5%		
R140	1413302214	RES, CARBON, AT	220 OHM, 1/4W, 2%		
R141	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R142	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R143	1413302214	RES, CARBON, AT	220 OHM, 1/4W, 2%		
R144	1441302238	RES, METAL, AT	22K OHM, 1/8W, 1%		
R145	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R146	1414201547	RES, CARBON, AT	150K OHM, 1/2W, 5%		
R201	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R202	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R203	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R204	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R205	1433602R2B	RES, METAL, OXIDE, AT	2.2 OHM, 1W, 5%, 63MM TAPING		
R206	1412101841	RES, CARBON, AT	180K OHM, 1/6W, 5%		
R207	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R208	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R209	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R210	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R211	1434601018	RES, METAL, OXIDE, AT	100 OHM, 2W, 5%, 63MM TAPING		
R212	1412103024	RES, CARBON, AT	3K OHM, 1/6W, 5%		
R213	1414202214	RES, CARBON, AT	220 OHM, 1/2W, 5%		
R214	141420R681	RES, CARBON, AT	0.68 OHM, 1/2W, 5%		

# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R215	1412206832	RES, CARBON, AT	68K OHM, 1/6W, 2%		
R301	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R302	1441302238	RES, METAL, AT	22K OHM, 1/8W, 1%		
R303	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R304	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R305	1412101232	RES, CARBON, AT	12K OHM, 1/6W, 5%		
R306	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R307	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R308	1412106223	RES, CARBON, AT	6.2K OHM, 1/6W, 5%		
R309	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R310	1412103936	RES, CARBON, AT	39K OHM, 1/6W, 5%		
R311	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R312	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R313	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R314	1414201006	RES, CARBON, AT	10 OHM, 1/2W, 5%		
R315	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R316	1413405612	RES, CARBON, AT	560 OHM, 1/4W, 5%		
R317	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R318	1414204719	RES, CARBON, AT	470 OHM, 1/2W, 5%		
R319	1435506805	RES, METAL, OXIDE, AT	68 OHM, 3W, 5%, 63MM		
R320	1435501018	RES, METAL, OXIDE, AT	100 OHM, 3W, 5%, 63MM		
R321	1412105612	RES, CARBON, AT	560 OHM, 1/6W, 5%		
R322	1412101232	RES, CARBON, AT	12K OHM, 1/6W, 5%		
R323	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R324	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R325	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R326	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R327	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R328	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R329	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R330	1413404734	RES, CARBON, AT	47K OHM, 1/4W, 5%		
R331	1413401838	RES, CARBON, AT	18K OHM, 1/4W, 5%		

# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R332	1412101232	RES, CARBON, AT	12K OHM, 1/6W, 5%		
R333	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R334	1413406832	RES, CARBON, AT	68K OHM, 1/4W, 5%		
R335	1462502R22	RES, WIRE WOUND AT	2.2 OHM, 3W, 5%, 63MM T		
R336	1414201R01	RES, CARBON, AT	1 OHM, 1/2W, 5%		
R337	1413404707	RES, CARBON, AT	47 OHM, 1/4W, 5%		
R338	1435506805	RES, METAL OXIDE, AT	68 OHM, 3W, 5%, 63MM		
R339	1413406832	RES, CARBON, AT	68K OHM, 1/4W, 5%		
R340	1413404734	RES, CARBON, AT	47K OHM, 1/4W, 5%		
R341	1413406832	RES, CARBON, AT	68K OHM, 1/4W, 5%		
R342	1413404734	RES, CARBON, AT	47K OHM, 1/4W, 5%		
R343	1413404734	RES, CARBON, AT	47K OHM, 1/4W, 5%		
R345	1435506805	RES, METAL OXIDE, AT	68 OHM, 3W, 5%, 63MM		
R346	1414201006	RES, CARBON, AT	10 OHM, 1/2W, 5%		
R347	1414202214	RES, CARBON, AT	220 OHM, 1/2W, 5%		
R348	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R349	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R350	1435506805	RES, METAL OXIDE AT	68 OHM, 3W, 5%, 63MM		
R401	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R402	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R403	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R404	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R405	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R407	1413401838	RES, CARBON, AT	18K OHM, 1/4W, 5%		
R408	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R409	1412105107	RES, CARBON, AT	51 OHM, 1/6W, 5%		
R410	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R411	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R412	1412105107	RES, CARBON, AT	51 OHM, 1/6W, 5%		
R413	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R414	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R415	1412105107	RES, CARBON, AT	51 OHM, 1/6W, 5%		

# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R416	1412102214	RES, CARBON, AT	220 OHM, 1/6W,5%		
R417	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R431R, G, B	1413402214	RES, CARBON, AT	220 OHM, 1/4W, 5%		
R432G, B	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R433R, G, B	1413401018	RES, CARBON, AT	100 OHM, 1/4W, 5%		
R434R, G, B	1473201021	RES, CARBON, AT	1K OHM, 5W, 5%		
R435R, G, B	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R436R, G, B	1413404707	RES, CARBON, AT	47 OHM, 1/4W, 5%		
R437R, G, B	1413404707	RES, CARBON, AT	47 OHM, 1/4W, 5%		
R438R, G, B	1413402731	RES, CARBON, AT	27K OHM, 1/4W, 5%		
R439R, G, B	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R440R, G, B	1412105636	RES, CARBON, AT	56K OHM, 1/6W, 2%		
R441	1414202214	RES, CARBON, AT	220K OHM, 1/2W, 5%		
R501	1413401033	RES, CARBON, AT	10K OHM, 1/4W, 5%		
R502	1413401511	RES, CARBON, AT	150 OHM, 1/4W, 5%		
R503	1413402238	RES, CARBON, AT	22K OHM, 1/4W, 5%		
R601	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R602	1412101523	RES, CARBON, AT	1.5K OHM, 1/6W, 5%		
R603	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R604	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R605	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R606	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R607	1413404707	RES, CARBON, AT	47 OHM, 1/4W,5%		
R608	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R609	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R611	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R611	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R612	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R613	1414201006	RES, CARBON, AT	10 OHM, 1/2W, 5%		
R614	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R615	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R616	1412104722	RES, CARBON, AT	4.7K OHM, 1/2W, 5%		



# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R618	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R619	1413403315	RES, CARBON, AT	330 OHM, 1/4W, 5%		
R620	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R701	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R702	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R703	1412102731	RES, CARBON, AT	27K OHM, 1/6W, 5%		
R704	1412101244	RES, CARBON, AT	120K OHM, 1/6W, 5%		
R705	1412102743	RES, CARBON, AT	270K OHM, 1/6W, 5%		
R706	1414202R22	RES, CARBON, AT	2.2 OHM, 1/2, 5%		
R707	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R708	1412206832	RES, CARBON, AT	68K OHM, 1/6W, 2%		
R709	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R710	1414201523	RES, CARBON, AT	1.5K OHM, 1/2W, 5%		
R711	1412101838	RES, CARBON, AT	18K OHM, 1/6W, 5%		
R712	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R713	1412103327	RES, CARBON, AT	3.3K OHM, 1/6W, 5%		
R714	1412102241	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R715	1412106829	RES, CARBON, AT	6.8K OHM, 1/6W, 5%		
R716	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R717	1412101244	RES, CARBON, AT	120K OHM, 1/6W, 5%		
R718	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R719	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R720	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R721	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R722	1412206832	RES, CARBON, AT	68K OHM, 1/6W, 5%		
R723	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R724	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R725	1412105636	RES, CARBON, AT	56K OHM, 1/6W, 5%		
R726	1412102241	RES, CARBON, AT	220K OHM, 1/6W, 5%		
R727	1412106844	RES, CARBON, AT	680K OHM, 1/6W, 5%		
R728	1412206832	RES, CARBON, AT	68K OHM, 1/6W, 2%		
R801	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		

# FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R802	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R803	1412103936	RES, CARBON, AT	39K OHM, 1/6W, 5%		
R804	1413401523	RES, CARBON, AT	1.5K OHM, 1/4W, 5%		
R805	1412101523	RES, CARBON, AT	1.5K OHM, 1/6W, 5%		
R806	1433602R2B	RES, METAL, OXIDE, AT	2.2 OHM, 1W, 5%, 63MM TAPING		
R807	1414201045	RES, CARBON, AT	100K OHM, 1/2W, 5%		
R808	1413405624	RES, CARBON, AT	5.6K OHM, 1/4W, 5%		
R809	1413401841	RES, CARBON, AT	180K OHM, 1/4W, 5%		
R810	1413403339	RES, CARBON, AT	33K OHM, 1/4W, 5%		
R811	1412102731	RES, CARBON, AT	27K OHM, 1/6W, 5%		
R812	1413401841	RES, CARBON, AT	180K OHM, 1/4W, 2%		
R813	1412104746	RES, CARBON, AT	470K OHM, 1/6W, 5%		
R814	1412104734	RES, CARBON, AT	47K OHM, 1/6W, 5%		
R815	1414202R22	RES, CARBON, AT	2.2 OHM, 1/2W, 5%		
R816	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R817	1413407535	RES, CARBON, AT	75K OHM, 1/4W, 5%		
R818	1413405636	RES, CARBON, AT	56K OHM, 1/4W, 5%		
R819	1412105624	RES, CARBON, AT	5.6K OHM, 1/6W, 5%		
R820	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R821	1414201057	RES, CARBON, AT	1M OHM, 1/2W, 5%		
R822	1413403924	RES, CARBON, AT	3.9K OHM, 1/4W, 5%		
R823	1412102743	RES, CARBON, AT	270K OHM, 1/6W, 5%		
R824	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R825	1412105636	RES, CARBON, AT	56K OHM, 1/6W, 5%		
R826	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R827	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R828	1412108226	RES, CARBON, AT	8.2K OHM, 1/6W, 5%		
R829	1412101057	RES, CARBON, AT	1M OHM, 1/6W, 5%		
R830	1412106844	RES, CARBON, AT	680K OHM, 1/6W, 5%		
R901	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R902	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R903	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		

### FIXED RESISTOR

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
R904	1412101033	RES, CARBON, AT	10K OHM, 1/6W,5%		
R905	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R906	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R907	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R908	1413403315	RES, CARBON, AT	330 OHM, 1/4W, 5%		
R997	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		

### Variable Resistor

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
PT101	1562190087	THERMISTOR, PTC	14 OHM, 20%, 220V, 2PIN		
TH101	1562290024	THERMISTOR, NTC	5 OHM, 3.4A, 2.4W		
TH102	1562290024	THERMISTOR, NTC	5 OHM, 3.4A, 2.4W		
VR101	1527290036	VAR, NO-HANDLE, CAP, V-TYPE, RT	500 OHM, B, 0.1W		
VR301	1527190087	VAR, NO-HANDLE, CAP, H-TYPE, RT	500 OHM, B, 0.1W		
VR401	1527190063	VAR, NO-HANDLE, CAP, H-TYPE, RT	100 OHM, B, 0.1W		
VR402	1527190063	VAR, NO-HANDLE, CAP, H-TYPE, RT	100 OHM, B, 0.1W		
VR403	1527190063	VAR, NO-HANDLE, CAP, H-TYPE, RT	100 OHM, B, 0.1W		
VR404	1535200051	VAR, HANDLE, PCB-MOUNT, V-TYPE	10K OHM, B, 0.05W		
VR431R, G, B	1527190024	VAR, NO-HANDLE, CAP, H-TYPE, PT	50K OHM, B, 0.1W		
VR801	1527290099	VAR, NO-HANDLE, CAP, V-TYPE, PT	20K OHM, B, 0.1W		
VR802	1527190024	VAR, NO-HANDLE, CAP, H-TYPE, PT	50K OHM, B, 0.1W		
VR803	1535200063	VAR, HANDLE, PCB-MOUNT, V-TYPE	50K OHM, B, 0.05W		

### PCB

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	1611101399	PCB, TACT S/W, SC-528UX(L)	30 * 229, FR-1, 1.6T		
	1611101404	PCB, MAIN, SC-528UX(L)	237 * 295, FR-1, 1.6T, DS-1107A		
	1611101479	PCB, SC-528UX(L), SOCKET	110 * 134, FR-1, 1.6T		

# Coil and Transformer

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
L101	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L102	1722200087	COIL, CHOKE	50UH+-15%, SC-431EII/VII		
L103	1722200339	COIL, CHOKE	4MH, 15%		
L104	1722200087	COIL, CHOKE	50UH+-15%, SC-431EII/VII		
L105	1722200087	COIL, CHOKE	50UH+-15%, SC-431EII/VII		
L106	1722200087	COIL, CHOKE	50UH+-15%, SC-431EII/VII		
L107	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L301	1722600378	COIL, H-LIN, FIX	4.9UH, 25%, SUMI-TUBE		
L302	1722200286	COIL, CHOKE	1MH, 15%, T-500		
L304	1722200087	COIL, CHOKE	50UH+-15%, SC-431EII/VII		
L401	1731300128	FILTER, CORE	BEAD, 1300OHM, 3.5 * 8.0		
L402	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L403	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L405	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L430R, G, B	1722100104	COIL, PEAKING	1.2UH, 10%, RT		
L431R, G, B	1722100104	COIL, PEAKING	1.2UH, 10%, RT		
L701	1721100223	COIL, MODULATION	LITZ, USTC, 88UH-100UH, T-500		
LF101	1731100298	FILTER, LINE	20MH, SC-726V		
T101	1711600514	TRANS, POWER, SWITCHING	SC-528UX/N, 115/230V		
T102	1711700036	COIL, TRANS	3MH/3MH, SC-528MX		
T103	1711700051	COIL, TRANS	9MH, 93UH, SC-4000, STAND-BY		
T301	1713200262	COIL, TRANS, H-DRIVE	10MH, 70UH, 2.2UH		
T302	1712290259	FBT COLOR	Y262641, 64KHZ		
	1722400208	COIL, DEGAUSSING	115+/-1TS, 0.45, 13.7OHM, 1040MM		
	1731400063	FILTER, EMI SOCKET	250V/3A, 473PF(X1), 222PF, 0.2MH, SEV		

### Other Electricity

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
F101	1910490012	FUSE TIME-LAG WITHOUT LEAD	3.15A, 250V, 5 * 20MM, CERAMIC		
F101	1911390087	FUSE CLIP, TAPPING TYPE	250V, 7.5A, D5.2 * 2.8		
F102	1911390087	FUSE CLIP, TAPPING TYPE	250V, 7.5A, D5.2 * 2.8		
G2	1917300131	CORE, RING, FERRITE	9.9(4.7) * 5.2, 9.9 PI		
RL101	1912190036	RELAY	12VDC/250VAC, 10A		
RL301	1912190024	RELAY	12VDC, -, -, G6B1114P-FD-US		
SG401	1916100036	NEON LAMP	200VDC		
SW102	1913800012	TACT SWITCH	3P, 12V, 50MA, SKHV15911A		
SW301	1913900012	LEVER SWITCH	36V, 0.2A, 4PIN		
SW901	1913800012	TACT. SWITCH	3P, 12V, 50MA, SKHV15911A		
SW902	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW903	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW904	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW905	1913800012	TACT. SWITCH	3P, 12V, 50MA, SKHV15911A		
SW906	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW907	1913800012	TACT. SWITCH	3P, 12V, 50MA, SKHV15911A		
SW908	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW909	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW910	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
SW911	1913800012	TACT, SWITCH	3P, 12V, 50MA, SKHV15911A		
	1913190048	PUSH, SWITCH	SPST, 4A/32A, 250V, 2P, J-U3065 #01		

### Transistor

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
Q101	2111400036	TR NPN TO-92	KSC1008Y, 0.7A, 80V, 800MA, LF AMP		
Q102	2111400036	TR NPN TO-92	KSC1008Y, 0.7A, 80V, 800MA, LF AMP		
Q103	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q104	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q105	2113190182	FET N-CHANNEL	2SK1351, 5A, 500V, 40W(TC), TO-220		
Q106	2111700051	TR NPN TO-220	KSC5027R, 3A, 1100V, 50W(TC), HV SW		
Q107	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q108	2111400063	TR NPN TO-92	2222A, 0.6, 75V, 625MW, GP, RT		

# Transistor

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
Q109	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MA, AF AMP/OSC		
Q110	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MA, AF AMP/OSC		
Q111	2111790116	TR NPN TO-220	MJE3055T, 10A, 70V, 75W(TC), PW SW		
Q301	2111400116	TR NPN TO-92	KSC2331Y, 700MA, 80V, 1.0W, LF AMP		
Q302	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q304	2111790342	TR NPN TO-3P	C4762, 7A, 1500V, 50W(TC), HOR DEF		
Q305	2112400024	TR NPN TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q306	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q307	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q308	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q310	2111400315	TR NPN TO-92	2N5551C-Y, 0.6A, 160V, 625MW		
Q311	2113190179	FET N-CHANNEL	2SK890, 10A, 200V, 75W(TC), TO-220		
Q312	2111400315	TR NPN TO-92	2N5551C-Y, 0.6A, 160V, 625MW		
Q313	2113190179	FET N-CHANNEL	2SK890, 10A, 200V, 75W(TC), TO-220		
Q314	2111400315	TR NPN TO-92	2N5551C-Y, 0.6A, 160V, 625MW		
Q315	2113190179	FET N-CHANNEL	2SK890, 10A, 200V, 75W(TC), TO-220		
Q316	2111400116	TR NPN TO-92	KSC2331Y, 700MA, 80V, 1.0W, LF AMP		
Q432R, G, B	2111590087	TR NPN TO-126	2SC3950D, 0.5A, 30V, 1.3W, VD O/P, ML		
Q433R, G, B	2111590099	TR NPN TO-126	2SC3953D, 0.2A, 120V, 1.3W, VD O/P, ML		
Q434R, G, B	2112590048	TR NPN TO-126	2SA1538E, 0.2A, 120V, 1.3W, VD O/P, ML		
Q501	2111400116	TR NPN TO-92	KSC2331Y, 700MA, 80V, 1.0W, LF AMP		
Q502	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q601	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q602	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q701	2112400024	TR PNP TO-92	KSC733CY, 0.15A, 60V, 0.25W, LF AMP		
Q702	2112400024	TR PNP TO-92	KSC733CY, 0.15A, 60V, 0.25W, LF AMP		
Q703	2111500131	TR NPN TO-126	KSE800, 4A, 60V, 40W		
Q704	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q705	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q706	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q801	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q803	2111400116	TR NPN TO-92	KSC2331Y, 700MA, 80V, 1.0W, LF AMP		
Q804	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q805	2112400024	TR NPN TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q806	2112400143	TR NPN TO-92	2N6520, 5A, 350V, 0.625W, HV, TAPING		

## Diode

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
D101	2211390051	RECTIFIER DIODE BR	GBU4J. 4A, 600V, LEAD CUTTING		
D102	2211190012	RECTIFIER DIODE FR	1A, 1000V, MR818/GI818		
D103	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D104	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D105	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D106	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D107	2211190419	RECTIFIER DIODE FR	3A, 800V, 75NS, UF5407		
D108	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D109	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D110	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D111	2211190419	RECTIFIER DIODE FR	3A,800V, 75NS, UF5407		
D112	2211190167	RECTIFIER DIODE FR	1.5A, 400V, RGP15G/FF1504		
D113	2211190434	RECTIFIER DIODE FR	3A, 200V, 50NS, UF5402		
D114	2211190434	RECTIFIER DIODE FR	3A, 200V, 50NS, UF5402		
D115	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D116	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D117	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D118	2211190458	RECTIFIER DIODE FR	3A, 400V, 50NS, UF5404		
D201	2212100116	ZENER DIODE	0.5W, 12V, UZ12B		
D202	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D301	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D302	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D303	2212100116	ZENER DIODE	0.5W, 12V, UZ12B		
D304	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D305	2211190422	RECTIFIER DIODE FR	5A, 1500V, 1.5NS, 5THZ52		
D306	2211190458	RECTIFIER DIODE FR	3A, 400V, 50NS, UF5404		
D307	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D308	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D309	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D310	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D313	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		

# Diode

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
D314	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		
D315	2212100366	ZENER DIODE	0.5W, 10V, MTZ, 10C		
D316	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D404-D406	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D431R, G, B	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D432R, G, B	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D434R, G, B	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		
D436R, G, B	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D437R, G, B	2212100167	ZENER DIODE	0.5, 24V, UZ24B		
D501	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D502	2212100051	ZENER DIODE	0.5W, 5.1V, UZ5.1B		
D503	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D601	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D602	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D603	2212100051	ZENER DIODE	0.5W, 5.1V, UZ5.1B		
D606	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D701	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D702	2212100051	ZENER DIODE	0.5W, 5.1V, UZ5.1B		
D801	2211190087	RECTIFIER DIODE FR	1A, 600, 1N4937		
D802	2211190167	RECTIFIER DIODE FR	1.5A, 400V,RGP15G/FF1504		
D803	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D804	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D805	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D806	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		
D808	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D901	2215300012	LED GREEN/RED	SPR-39MV/W3, 25MA, 75MW/20MA, 60MW, ROUND		
J25	2211190087	RECTIFIER DIODE FR	1A, 600V, 1N4937		



## IC

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
HI101	2351100087	IC, HYBRID	012UX, HIGH VOLTAGE PWM		
IC101	2332200104	IC, LINEAR, SIP-5	STR58041		
IC102	2331200116	IC, REGULATOR, TO-220	317, 1.5A		
IC103	2330190048	IC, OPTO-COUPLER, DIP	4N35(SOC815A), WITH VDE, 6P		
IC104	2330190048	IC, OPTO-COUPLER, DIP	4N35(SOC815A), WITH VDE, 6P		
IC105	2331300012	IC, REGULATOR, TO-92	431C, PROGRAMMABLE PRECISION		
IC201	2332190339	IC, LINEAR, SIP-9	TDA8351, VERTICAL DEFLECTION		
IC301	2332190342	IC, LINEAR, DIP-20	TDA4852, HV DEFLECTION CONTROLLER		
IC401	2332190208	IC, LINEAR, DIP	1203, RGB VIDEO AMP, 28		
IC601	2316500868	IC, HCT, DIP-14	74HCT86, QUAD 2-INPUT XOR GATES		
IC602	2341790036	IC, EEPROM, DIP-8	AT24C02-10PC, 2KBIT SERIAL		
IC604	2332190327	IC, LINEAR, DIP-16	6 BIT DAC, TDA8444		
IC605	2332300048	IC, LINEAR, TO-92	KIA7041P, VOLTAGE DETECTOR		
IC701	2332200131	IC, LINEAR, SIP	358, OP AMP, 9P		
IC702	2332200131	IC, LINEAR, SIP	358, OP AMP, 9P		

## Metal

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
CN101	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN102	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN103	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN104	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN201	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN301	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN404	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
CN803	3113100012	BEAD PIN	D2.36 * 14.1, BRASS, SN		
	3111400618	HEAT SINK-N	30 * 15 * 23.5, A6063S		
	3111400749	HEAT, SINK, SC-4000/L	24.2 * 14.8 * 25		
	3111400788	HEAT SINK-N, SC-528UX/L	50 * 20 * 30 AL (A6063S)		

### Metal

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	3112100131	SPRING, COMPRESSION, S/W, CGA	D11 * L17 * WD0.6, SPS		
	3112400048	GND-LUG, SHIELD, T-500	59.7 * 16 * 0.35T, PBSP		
	3112900485	SHIELD COVER, SIDE, T-500	270.6 * 165 * 194.3, AL 0.4T		
	3112900565	SHIELD COVER, SOCKET, SC-428UX/L	137 * 113 * 42 * 0.3T		
	3121102413	MET-I, PRS, SUPPORT-A, SC-528UX/UXL	68.5 * 78 * 14, SWCC-P-30/30, 1.0T		
	3121102476	MET-I, PRS, BACK CHASSIS, SC-528UXL	160 * 58 * 12, SECC-P-30/30		

### Plastic

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	3211102571	PLA, EXT-H, REAR, T-500	266 * 348.4 * 282.4, ABS, OEM-3357		
	3231100012	CABLE TIE	L101.6 * W25 * T1		
	3231700194	LOCKING SUPPORT SC-528UX/L	16 * 26.6 * 5.5 DAWS-2N(L)		
	3232900012	PUSH LATCH	SA 701-3AA		
	3261103951	PLA, BOTTOM, FRONT, SC-528MX(L)	279 * 130.3 * 41, PC/ABS, OEM-3357		
	3261103975	PLA, CAP, CONTROL, SC-528MX(L)	159.5 * 19 * 14.7, ABS, OEM-3357		
	3261103987	PLA, COVER, CONTROL, SC-528MX(L)	210 * 31 * 21.5, ABS, OEM-3357		
	3261103999	PLA, S/W CAP, SC-528MX(L)	20.8 * 17.5 * 22, ABS, OEM-3357		
	3261104006	PLA, MTG BRKT, SC-528MX(L)	21 * 16 * 15, ABS, OEM-3357		
	3261104018	PLA, KNOB, SC-528MX(L)	D19 * D20 * 13.5, ABS, OEM-3357		
	3261104021	PLA, LED LENS, SC-528MX(L)	10.8 * 7.8 * 2.6, GPPS		
	3261104033	PLA, PCB GUIDE-B, SC-528MX(L)	87 * 13.8 * 10, ABS, OEM-3357		

## Connection Paers

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	3314200012	MS+, PAN, W/P.W, ZPW	M3 * 8, SWRCH1018AK		
	3314200024	MS+, PAN, W/P.W, ZPW	M3 * 10, SWRCH1018AK		
	3314200036	MS+, PAN, W/P.W, ZPW	M3 * 12, SWRCH1018AK		
	3316200012	MS+, BND, ZPW	M3 * 6, SWRCH1018AK		
	3316800024	MS+, BND, W/T.L.W, ZPW	M4 * 8, SWRCH1018AK		
	3342500012	TS+, BND, W/P.W.B, ZPW	M3 * 8, SWRCH1018AK		
	3348500012	TS+, OVAL, 2, ZPW	M3 * 12, SWRCH1018AK		
	3361200012	PS+, PAN, ZPW	#4 * 12, SWCH 10R		
	3361200051	PS+, PAN, ZPW	M3.5 * 10, SWRCH1018AK		
	3361200259	PS+, PAN, ZPW	M4.5 * 14, SWRCH1018AK		
	3364200024	PS+, HEX, W/S.W, ZPW	M4.5 * 24, SWRCH1018AK, WD : 16		
	3385200012	NUT, HEX, 2, ZPW	M3 * 0.5P, S10C		

## Packing

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	3411103713	BOX, SC-528UXL, SAMTRON	485 * 453 * 445(SUK300 * K200 * SUK300)		
	3421100514	S/FOAM, SC-528MX(L)	470 * 420 * 120, EPS		
	3431100577	VINYL BAG, SET, SAMTRON	800 * 880, HDPE 0.02T, RECYCLING		
	3431100592	VINYL BAG, SIGNAL CABLE, SAMTRON	110 * 200, HDPE 0.05T, RECYCLING		

## Print

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
	3511105081	LABEL, WARNING, SC-431EII/VII	HIGH VOLTAGE		
	3511108015	LABEL, BOX, SC-4 * *, DOUBLE BACKING	105 * 110, ART PAPER		
	3511109298	LABEL, PRODUCT SC-528UXL(SAMTRON)	99.8 * 49.8 * 0.075T, OEM-3357		
	3511109446	LABEL, DPMS(SAMTRON), SC-428VSL + (E), ETC.	80 * 30 * 0.038T		
	3511109924	LABEL, BAR CODE	75 * 35		
	3511110062	LABEL, UPC CODE(SDI) ALL	50 * 25		

# Wire, Connector

CKT. NO.	CODE	DESCRIPTION	SPEC	ECO NO	DATE
CN107	366150007B	CONNECTOR SHROUDED HEADER	2.5, ST, 11P, 35301-1150-7		
CN401	3661500075	CONNECTOR SHROUDED HEADER	2.5, ST, 11P, 5267-11A		
CN402	3661500024	CONNECTOR SHROUDED HEADER	2.5, ST, 3P, 5267-03A		
CN403	3641200752	WIRE, CONN/HOUSING	170MM, 12P, 5264-12, 2.5, 5395-13		
CN601	366150003B	CONNECTOR SHROUDED HEADER	2.5, ST, 4P, 35301-0450-7, STICK		
CN801	366150001B	CONNECTOR SHROUDED HEADER	2.5, ST, 2P, 35301-0250-7, STICK		
CN802	366140055B	CONNECTOR, LOCK HEADER	2.5, ST, 12P, 5045-12A, STICK		
CN901	3641500381	WIRE, CONN/HOUSING	470MM, 5395-06, 5264-02/03, 1007# 26		
CN902	3641200764	WIRE, CONN/HOUSING	170MM, 5264-11, BK, Y, O, W, 5395-07/06, 1007# 2		
GND1	3643100434	WIRE, RING TER, SINGLE	BK, D4.3, 120MM, 1672# 22, PCB TER		
GND1	3643100419	WIRE, RING TER, SINGLE	BK, D5.60MM, 1015# 22, PIN		
GND2	3643100419	WIRE, RING TER, SINGLE	BK, D5.60MM, 1015# 22, PIN		
GND2	3643100434	WIRE, RING TER, SINGLE	BK, D4.3, 120MM, 1672# 22, PCB TER		
GND3	3643100434	WIRE, RING TER, SINGLE	BK, D4.3, 120MM, 1672# 22, PCB TER		
J1-J18	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1X0.6, SAD		
J21-J24	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1X0.6, SAD		
J27-J120	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1X0.6, SAD		
L303	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1X0.6, SAD		
R351	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1X0.6, SAD		
R617	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1X0.6, SAD		
	3621200223	WIREFORM, UL1015 AWG22	TCST, 1ST, 17*0.16, 137MM, BK		
	3641200407	WIRE, CONN/HOUSING	190MM, 2P, GY, 10, R, R, 1672		
	3641300645	WIRE, CONN/HOUSING	240MM, 3P, GY, 10/8, W, BK, 1672		
	3643100208	WIRE, RING TER, SINGLE	G/Y, D5.3, 150MM		
	3643700194	BRAID WIRE, RING, W/TUBE	D5* 120MM		
	3643700473	BRAID WIRE, CDT GND, SC-528UX(L)	685MM, 2*330MM, 1P, 260MM, 2P, 0.16*3*16		
	365210021B	CORD, POWER, NORMAL, DETACH	SVT, 125V/7A, BK, 6FT, SHIELDED, T MARK		
	365219004B	CORD, POWER, NORMAL, DETACH	H05VV-F, 250V, BK, 1830MM, T MARK		
	3652190194	CORD, POWER, NORMAL, DETACH	GFC-3R, 250V/10A, BE, 2500MM, AUST		
	3654100701	CABLE, SIGNAL, NON-DET	15P, 1705(1500MM), SC-428UX(L), BK, MOLD		
	3663300131	CRT SOCKET	D29, 12P, ISH-19S, SOLDERLESS		